

The Piel Hematite Iron Company

(LIMITED).

To be incorporated under the Limited Liability Act.

CAPITAL £100,000, IN 4000 SHARES OF £25 EACH

(With power to increase to £150,000 if necessary.)

A deposit of £5 per share to be paid on allotment. Subsequent calls at intervals of not less than two months, to the extent of seven-tenths of the entire capital—the remaining portion to form a reserve.

DIRECTORS.

The Chevalier HARRY CLENCH, K.G.S., K.G.C., &c., &c., Norwich.
 Lieut. Col. H. RIGG, Cross Rigg Hall, Penrith.
 FRANCIS PARKER, Esq., Acorn Bank, Penrith.
 JOHN BEATSON, Esq., Iron Merchant, Sheffield.
 E. TALBOT, Esq.—MANAGING DIRECTOR.

BANKERS—THE LANCASTER BANKING COMPANY.

SOLICITORS—LAWRENCE HOLDEN, Esq., Lancaster.

Messrs. HANCOCK, SAUNDERS, AND HAWKSFORD, 36, Carey-street, Lincoln's Inn, London.

AUDITOR—H. C. BELOE, Esq., Liverpool.

SHAREBROKERS.

Messrs. H. BAZETT JONES AND SONS, Preston.

Messrs. WOLFENDEN AND GELL, Corporation-street, Manchester. JARVIS W. BARBER, Esq., 40, Queen-street, Sheffield.

SECRETARY AND ACCOUNTANT—MARDON THOMAS, Esq.

The object in establishing this company is for the purpose of erecting furnaces and smelting the richer ores of Ireland in combination with the hematite ores of the Furness district. The annual produce of the latter cannot be less than 900,000 tons per annum, a large portion of which is sent out of the district, instead of being consumed therein, which can now be done with advantage and profit.

A site for the works has been selected in the vicinity of Piel (adjacent to the iron ore pits, and near to the large establishment of the Barrow Hematite Steel Company), which offers every facility for the successful development of the enterprise. The close proximity of the shipping port and extensive docks of Barrow, together with the harbour of Piel, will enable pig-iron to be dispatched, and the Irish ores to be received, with advantage to the concern.

Provision will be made in the Articles of Association by which mining property in the district, and other suitable localities, may be worked by the company. Leases of hematite property, embracing some hundreds of acres, in the Furness and other districts, are now under consideration, with a view to their being transferred to this company on advantageous terms.

A considerable portion of the capital has already been subscribed, and arrangements have been made with a gentleman (who will act as managing director), possessing long and valuable experience, by which every security will be afforded that the capital will be carefully and judiciously expended, and the subsequent working operations be conducted with caution and economy.

The company will be duly incorporated under the Limited Liability Act, by which every shareholder is responsible only for the amount of his shares.

It is proposed to place the capital at £100,000, in shares of £25 each, to call up (say) £70,000 (in periodical payments, as may be required), and allow the remainder to form a reserve capital.

The cost of erection of three modern-built furnaces, with all requisite appendages, purchase of land, &c., will be £50,000, thus leaving of the called-up capital £20,000 as a working fund.

The cost of making iron will be about £2 12s. 6d. per ton, and the selling price

is now £3 per ton at existing works; so that upon a weekly output of (say) 1200 tons on the average (that is, after allowing for the variations of the Iron Market), from three furnaces, good profits will accrue to the proprietors, equivalent to a return, on the average, of 15 per cent. per annum.

The Furness Railway Company, whose main line passes the intended site, have kindly intimated their wish to render all possible assistance to the projected company.

The market for hematite pig-iron is now on the advance, and as it is the only class of iron employed in the Bessemer system, it is fully evident that a constant demand must exist, and continue to increase, for there can be no doubt, now that the Bessemer process has terminated, a great impetus will be given to this special branch of manufacture; its future requirements, therefore, will be very considerable, and as the production of hematite pig-iron must necessarily be restricted, it will be seen that a good and permanent prospect of success awaits this important section of the iron trade.

Applications for shares will also be received by the solicitors of the company, LAWRENCE HOLDEN, Esq., Lancaster; and Messrs. HANCOCK, SAUNDERS, AND HAWKSFORD, 36, Carey-street, Lincoln's Inn, London, from whom prospectuses can be obtained.

FORM OF APPLICATION FOR SHARES.

To the directors of the Piel Hematite Iron Company (Limited).

GENTLEMEN,—I request that you will allot me shares in the above company, and on receipt of notice of such allotment, I will pay to the bankers of the company £5 per share as deposit; and I undertake to pay any future calls as they may become due. I further request that you will place my name on the Register of Members for the shares so allotted.

I am, Gentlemen,

Name.....
 Residence.....
 Occupation.....

ISSUE OF UNALLOTTED SHARES.

South St. Just Tin Mining Company

(LIMITED).

Incorporated under the Companies Acts, 1862 and 1867.

CAPITAL £10,000, IN 5000 SHARES OF £2 EACH TO BE FULLY PAID-UP.

No further liability.

DIRECTORS.

Major C. J. PATTERSON, Army and Navy Club, Pall Mall.
 WILLIAM FREDERICK TRITTON, Esq., 20, Nicholas-lane, E.C. (East India Merchant).
 Col. PAGET, Farnham, Surrey.
 GEORGE BURSLEM, Esq., Whitehall Yard, S.W.

BANKERS—LONDON AND SOUTH-WESTERN BANK, Lombard-street, E.C., and Branches.

SOLICITOR—ROBERT WARD STACPOOLE, Esq., Pinners' Hall, Old Broad-street.

LOCAL PURSER—WILLIAM ANGIN, Esq., St. Just, Cornwall.

SECRETARY (pro tem.)—Mr. F. W. GRANT.

OFFICES,—225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.

This company is established for purchasing the sets of, and machinery on, a mineral property situated in St. Just, Cornwall, and working a series of valuable tin lodes in a district long known and celebrated as one of the richest in the world, more especially for high quality tin ores.

The returns and profits from the mines in this district are so great as to almost surpass belief. Their position in the Dividend List is a sufficient guarantee for the present, and the prospects of the mines as they are being opened out warrant the assumption of a long-continued course of prosperity for the future.

The sets are very extensive, and have been granted at the unusually low royalty or dues of 1-24th for the term of 21 years, on the mining conditions generally adopted in Cornwall.

Their geological position cannot be surpassed, being in beautiful congeal strata for tin and copper ores, in the granite near the junction with the killas.

Intending investors, previous to applying for shares, may obtain an order to inspect the property, which is now in full operation, upon application at the office of the company, where prospectuses and every information may also be had, and specimens of the ores seen.

King Arthur Silver-Lead Mine

(LIMITED).

CAPITAL £16,000, IN SHARES OF £1 EACH.

Deposit on application 5s., on allotment 5s., and the remainder as required.

BANKERS—THE ALLIANCE BANK (Limited), Bartholomew-lane, London, E.C.

THE EAST CORNWALL BANK, Bodmin, Cornwall, and Branches.

SECRETARY—Mr. J. H. TILLY, 1, Circus-place, Finsbury, London.

The latest intelligence received from the manager, under date of the 1st June, states that the lode now worked upon has greatly improved, producing over 1 ton of silver-lead per fathom, in a solid state. The getting of this ore has been let at £6 per fathom, thus leaving a profit of £10 per fathom on the price of £16 5s. per ton obtained at Swansea. It is intended forthwith to extend the workings, so as largely to increase the returns of ore.

KING ARTHUR SILVER-LEAD MINE (LIMITED).

Notice is hereby given that the LIST OF APPLICATIONS FOR SHARES in the above company will be CLOSED on TUESDAY next, the 14th instant.—1, Circus-place, Finsbury, London.

IRON AND STEEL.—The invention of Mr. CHARLES W. SIEMENS, of Great George-street, consists of an improved mode of introducing the reduced ore into the open hearth of the melting furnace without, on the one hand, exposing the reduced ore to the oxidizing action of the flame, and, on the other hand, without exposing the reducing hoppers, retorts, or muffles to the extreme heat of the smelting-furnace. For this purpose the inventor does not discharge the reduced ore directly into the melting furnace, as heretofore, but into a chamber or chambers arranged at the back or along the sides of the same, in which chamber or chambers a reducing atmosphere is maintained by an influx of reduction gases, although there exists an open communication between the chamber and the furnace. The bottom surface of the chamber inclines towards the hearth of the melting furnace upon which the metallic bath is prepared, in order to facilitate the introduction of the reduced ore into the bath, when required, by means of rabbles introduced through a door or doors opposite the melting chamber. From this reduced ore chamber or chambers vertical or inclined hoppers or retorts rise upwards, into which the raw or calcined ore, together with the reducing and fluxing materials, are charged from above, by preference in a heated condition, and around these hoppers or retorts channels are provided, through which flame is made to circulate.

IRON AND STEEL.—The invention of Mr. J. PLAYER, Philadelphia, U.S.A., consists in first dividing the cast-iron in the condition in which it is left by the smelting operation into small pieces, flakes, grains, or powder by mechanical means, and then mixing it in a solid state, and in this minutely divided condition, with the oxides or other ingredients or agents designed to improve or purify it, or to aid in its conversion into steel or malleable iron, while such oxides or ingredients, or agents, are also in a solid state, and afterwards subjecting it to the puddling process or other manipulation intended to free it from its excess of carbon and from its impurities, so that in such manipulation the requisite mixture of the iron and purifying agents may be secured in the highest practicable degree.

ANNEALING POTS.—Mr. G. ROSE, of Birmingham, makes in the arch or roof of the fire-place or furnace in which the combustion of the fuel takes place, a series of nearly vertical flues. These flues are of a curved figure, and open at top into the annular flue or chamber in which the annealing pot is built or situated, and conduct the flame and products of combustion thereto. Horizontal flues are made in the brickwork of the annealing chamber or furnace, their inner ends opening into the curved or nearly vertical flues passing from the fireplace. The outer ends of the horizontal flues are open to the atmosphere, the amount of air passing through the said flues being regulated by sliding

dampers or perforated plates, or perforated slabs. The front of the fire-place is closed by a door perforated with a series of small holes.

TREATING HYDRO-CARBONS.—The object of the invention of Messrs. SCOTT and MITCHELL, of Addiswell, is to reduce the specific gravity, and otherwise improve the qualities of such oils. The oil to be treated is put into an ordinary still and distilled, and the vapor escaping therefrom during the distillation is passed through one or more heating vessels or chambers, and there exposed to the heat necessary to produce the change. The heating vessels or chambers may be made of metal, clay, or any other material adapted to endure the heat, and they may be made of any desired form, or they may be constituted of a coil of metal pipes, or a series of tubes, such as are used for heating air for blast-furnaces. The vapour from the oil may also be passed into a vessel, and there made to come in contact with superheated steam of sufficient temperature to produce the change.

SPLITTING ROCKS, &c.—The invention of Messrs. H. L. BOLGER and J. MEELIS, Duluth, consists of a conical or taper screw formed on a rod or mandrel of steel, iron, or other suitable material, and of a nut which is divided into two or more segments, also of a cylindrical step with a pivot hole therein for receiving the point of the conical screw or mandrel. The inventor introduces into the hole first the pivot step, and then the split nut, and into this they insert the small end of the screw or mandrel. They turn the mandrel round by a wrench, ratchet, or other means, and thus screw it into the split nut.

MOTIVE POWER.—It is proposed by Mr. H. CALL, of Concord, U.S., to construct a tank or cistern, which is nearly filled with water. Submerged in this tank is a wheel, having buckets of a curved form. This wheel turns on an axis, which passes through the sides of the tank, the bearings being packed to render them water-tight. An air pipe is introduced into the tank, and descends to the bottom of the same, its end being curved and arranged immediately under the wheel in such manner that the air passed through the pipe will be discharged into the bucket.

BORING MACHINERY.—Messrs. SPENCER and CONSTERDINE, of Manchester, have patented some improved drilling machinery, which consists of a suitable frame provided for the purpose of supporting the drill spindle and holders, which is secured to and forms part of a long projecting horizontal boss or journal, in and through which the shaft driving the drill spindle is supported, and is caused to give a revolving motion to the drill spindle, through the medium of bevel gearing, the horizontal boss or journal being supported by means of a bearing that will allow of the horizontal journal and frame supporting the

drill to be turned and placed at any angle that will adjust it to the work it is required to operate upon. The bearing supporting the horizontal journal is provided with a clip or jaw, formed at right angles, that will allow of its being secured at any height upon a vertical bar, the bottom end of which is provided with adjustable jaws, by which the tool is attached to the piece of work to be operated upon.

DIRECT-ACTING STEAM-ENGINES.—The invention of Mr. W. R. LAKE, of Southampton-buildings, consists in the arrangement of an adjustable slide in combination with the lever, which transmits the motion of the tappet rod to the slide valve of the auxiliary cylinder (and which may be termed the valve lever) in such a manner that the time occupied by the motion of the slide valve can be accommodated to the velocity of the motion of the main piston or pistons, and that the main piston or pistons can be kept from slamming against the heads of their cylinders. Also in the arrangement of a friction clutch, in combination with the valve lever and adjustable slide, in such a manner that the lever is permitted to follow the motion of the tappet rod after the valve of the auxiliary cylinder has completed its stroke, and injury to the mechanism is prevented. Also in the arrangement of a double exhaust in the auxiliary cylinder, which controls the valve motion of the main steam cylinder in such a manner that the exhaust from either end of the cylinder can be easily regulated, and the valve motion can be rendered easy.

TIN ORES IN AMERICA.

[Towards setting in a trustworthy light the moot question of the abundance or non-abundance of tin in Missouri, and other parts of America, the Editor of the United States Railroad and Mining Register requested Dr. Genth to communicate the present amount of knowledge possessed by experts in the profession of chemical mineralogy, of which he is so distinguished a master, on that subject. He has been good enough to send the following, with permission to make it public.]

SIR.—It is surprising that whilst we produce an abundance of gold, silver, copper, iron, zinc, nickel, chrome, &c., in fact of almost every commercially important metal, and that, for their supply we are, or at least should be, entirely independent of other nations, tin has been met with only in exceedingly small quantities. Although this metal occurs at numerous places in this country, there exists at present not a single mine which ships any ore or sends any metal to market, and from our present knowledge the indications are not favourable that any of the localities, with the exception perhaps of one or two, will be able to supply this want and eventually produce larger quantities. We send every year millions of dollars to England and the East Indies, and the discovery of a valuable tin mine is, therefore, a great desideratum, and would be of much importance.

The principal, and in fact the only, ore from which the great bulk of tin is extracted is the natural binoxide of tin, or cassiterite. This mineral, if not in well-defined crystals, generally would attract but little attention, and frequently resembles various silicates, such as garnet, tourmaline, &c., so much so that only persons familiar with mineralogy would be able to distinguish between them. During the last twenty years I have received for examination, from all parts of this country, numerous specimens of rocks and minerals which were suspected to contain tin. Some of the results which I have obtained were of considerable interest, and I take the liberty to communicate them, together with all the data which I have been able to find having reference to the occurrence of this metal.

In Maine, cassiterite occurs sparingly in small crystals at Paris, Hebron, and Greenwood. A short time ago it was discovered at Winslow, near Waterville College, where it is said to exist in greater abundance. Some specimens which I received somewhat resemble the ore from some of the European localities. My pieces consist of a silicious grey slate, with small scales of mica and minute crystals of arsenopyrite (mispickel), and violet and white fluorite; upon this is a stratum of mica, similar in appearance to the variety of lithia-mica, called "zinnwaldite," but of a different composition; upon it fluorite again, with very little pyrrhotine, and isolated crystals of brownish-black cassiterite. Judging from my specimens, the ore appears to occur in very thin seams, and it is doubtful whether it would pay for working.

In New Hampshire cassiterite has been found at Lyme, and somewhat more abundant, but not in workable quantities, at Jackson.

In Massachusetts, the microlite of Chesterfield contains 0.7 per cent. of stannic acid, and a few crystals of cassiterite have been found at Chesterfield, Beverly, Norwich, and Gosham.

The columbite from Haddam and Middletown, Connecticut, contain from a mere trace to 0.6 per cent. of stannic acid; traces of it I have also found in the slightly auriferous pyrite of Tolland.

About 18 years ago I made numerous analyses of a variety of a greyish clay from Pennsylvania, all of which showed small quantities of tin, varying from traces to about 1 per cent. The purty who gave me the samples for examination was very sanguine to find a valuable tin mine in this State, but he died before he could accomplish his object. I never was able to learn the exact locality where this clay came from.

Cassiterite is said to occur sparingly in talco-micaceous slates in some of the Virginia gold mines; I have not been able to find any, although I washed the sands from numerous localities. As a very doubtful occurrence of metallic tin, I will mention that from Campbell county, Prof. Francis H. Smith, of the University of Virginia, sent me a piece in 1855, and to my observation that I considered it as artificial he replied that he had seen specimens with quartz attached, and that he thought it really a genuine native tin. I have never since heard anything about this occurrence.

In North Carolina, I have found traces of tin in the wolfram of the Flowe Mine, in Mecklenburg county, and 0.13 per cent. in the schellite from the Dutchman vein of the Bangle Gold Mine, in Cabarrus county.

About two or three years ago a great tin excitement existed in Missouri, and a great deal of money has been lost in buying up worthless lands, which had been represented as containing valuable deposits of tin. The ores which were sent to me for examination at that time were of various kinds. A greenish epidotic rock contained no tin at all; a granite of medium grain, principally consisting of quartz and felspar, with very little mica, and which was sent as the principal tin ore, contained only a trace of tin, and the black sands from the neighbourhood contained a considerable quantity of magnetite, but also only a mere trace of tin. In neither was the tin in sufficient quantity or condition to be at all available. The occurrence of valuable tin ore in Missouri had been endorsed by the United States General Land Office on fraudulent specimens, which had been sent there as Missouri tin, and which probably came from Cornwall, England. After some correspondence about it, I received, through the kindness of Dr. A. R. Roessler, a very interesting rock from Madison county, Mo., which, in reality, contained more tin than any which I had previously examined from there. The rock consisted of a mixture of quartz, felspar, some pyroxene, magnetite, and sphene. An analysis of the whole rock gave—

Siliceous acid.....	45.95
Titanic acid.....	1.87
Stannic acid.....	0.90 = 0.99 tin.
Oxide of iron.....	15.26
Oxide of manganese.....	0.18
Alumina.....	14.32
Magnesia.....	4.44
Lime.....	10.36
Alkalies.....	7.12

The stannic acid being isomorphous with titanic acid, probably substituted in the sphene a portion of it, making the percentage of stanniferous sphene in the rock about 5.7 per cent.

For my inability to find, in the minerals and rocks sent to me from Missouri, tin in workable quantities, I have been bitterly abused, and all sorts of absurd assertions have been made about that tin—for instance, that it required very great skill to find it, as it existed in the ore as an alloy of tin with iridium, &c.

In California tin ore has been found in 1860, and I have analysed an average sample from the Cajalco Mine, San Bernardino county, in 1861, which yielded 22.45 per cent. of tin. The ore consisted of a grey quartz, mixed with a considerable quantity of hydrated oxides of iron and manganese, cassiterite, and minute quantities of black tourmaline. Prof. Whitney, in his Geological Survey of California, vol. I, p. 180, states that in 1860 and 1861 a great excitement existed on the subject of tin, and that claims were located on seams and streaks of dark hornblende, running irregularly through granite or slightly metamorphic rocks of the Temascal region. It does not appear that any of the old mines then taken up have been productive. A short time ago I received, through the kindness of Dr. A. R. Roessler and the Rev. Dr. R. E. Bendle, specimens from a recently discovered mine—the San Jacinto Mine, San Bernardino county—together with some metallic tin, smelted from the ore. The appearance of the ore is very peculiar. The quartose ore resembles those from the Cajalco Mine, although they are less mixed with earthy

matter. Most of the specimens, however, consist of black tourmaline (not hornblende) of a very fine grain, or crypto-crystalline needles, with greyish-white quartz, and in small seams or patches disseminated through the matrix, the cassiterite in flesh-coloured very fine grains, resembling some varieties of manganesian garnet; other specimens consist of tourmaline, with a more coarsely crystalline cassiterite of high lustre, and semi-transparent, with reddish-brown colour. In a preliminary examination of an average sample from my specimens I found 13.7 per cent. of tin. The ore is very easily concentrated by crushing and washing. In a sample thus concentrated (1), and in another sent from California (2), I found:—

Silicic acid	7.20	9.82
Tungstic acid	1.08	0.22
Stannic acid	82.00=64.32 tin.	76.15=59.92 tin.
Oxide of copper	0.32	0.27
alumina, magnesia, lime, boracic acid, &c.	9.40	13.54

The tin which was smelted from this ore contained:—Tin=99.78; iron=0.11; copper=0.11.

I am not informed whether or not the ore exists in sufficient quantities to warrant the exploitation of the mine.

Another specimen of tin ore has been found in the northern part of the State, at Weaverville; the vein seems not to have been found yet.

The cassiterite from Jordan Creek, near Boonville, Idaho, I have not yet seen, and have no information with reference to its occurrence.

Philadelphia, May 4.

F. A. GENTH.

—United States Railroad and Mining Register.

LEAD SMELTING IN MISSOURI (U.S.)

The Scotch hearth, so called, of this country differs but little from its British namesake. The method of smelting lead ore upon it, however, is a sort of compromise between the process used in Great Britain and that of the old American hearth. The preliminary roasting of the ores, peculiar to the former, is here dispensed with; and charcoal for fuel and a cold-blast have superseded the split wood and hot-air arrangement of the latter. As commonly built, a "furnace" consists of the hearth proper; the "stack" for carrying off the smoke and gas; and the means for producing a blast. The last may consist of either bellows or fan, worked by horse, water, or steam power. Each hearth, with its stack and tye (I particularly like that, for it is a vital point, and is always the first thing blamed if anything goes wrong), constitutes an "eye"; and a furnace is said to "run so many eyes," meaning hearths. For convenience, and economy of building material, the eyes are usually set side by side. The parts of a hearth are the basin, apron, walls, and lead kettle. The basin and apron are of iron, cast in one piece: 16 in. square by 7 in. deep is a common size of basin. Wings are cast upon three sides of it to support the walls, and upon the fourth is the apron, inclined away from the basin at an angle of 15°, and furnished with a groove to serve as a conduit for the melted lead into the lead kettle. The latter is a hemispherical kettle (say) 15 in. in diameter, set partly under the apron, in a low cast-iron cylinder—so arranged that a fire can be kept up beneath—for the purpose of retaining the lead in a melted state. Upon three sides of the basin, leaving the front open, a wall is built up of six blocks of cast-iron, 7 x 7 x 18, or 20 in. in size. The lower back block has a deep groove in the middle of its under side, corresponding to a slight one in the edge of the basin. In the opening thus made the tye is placed. The side of the basin to the rear generally projects a couple of inches above the others, which raises the mouth of the tye so much above the level of the lead bath, when the basin is filled. In addition to this, the lead basin is usually set inclining slightly forwards, to prevent the overflow of lead to the rear.

In constructing an "eye" the stack or mantle is first built, and the hearth afterwards set up within it upon a foundation of its own. The stack may be 7 ft. by 12 ft. inside measurement; the convenience of the smelter governs this usually. It is entirely open on one long side (the front) for a height of 7 to 8 ft.; and then gradually contracting in section, is carried up to a height of 30 ft. or more. The material may be either stone, brick, or logs, plastered with clay. At the distance of about a foot from the middle of the back wall of this huge fire-place, at a convenient height for the workman, the basin is placed, firmly set in masonry. Provision is made for a solid support and bracing to the iron blocks forming the back and side walls of the hearth, and also for a due to carry off the products of combustion from the fire under the lead kettle. The tye is introduced through an opening, left for the purpose, in the back wall of the stack. This important member, which may be considered the nerve of the eye, is usually of cast-iron, 2½ to 3 ft. long, tapering from 6 in. in diameter, or less, at the but, to 2½, 2, or 1½ in. at the nozzle, according to the pressure of the blast. It is highly important that the tye fits tightly (or be made tight with clay) in its groove in the back piece, that the escape of the blast backward may be prevented. The utmost penetration possible is required of the blast, in order to obtain a successful result in this process; and, with the means at disposal, the force of the blast cannot be generally increased sufficiently to balance such a loss. The tye should be so set that the centre of the blast, when unobstructed, strikes the middle point of the front edge of the basin just at the inception of the lead conduit in the apron. Experience shows that, for a pressure of blast equal to ½-in. column of quicksilver, the nozzle of the tye should not be less than 2½ in. in diameter. The amount of air supplied to the hearth, in that case, is about 4 cubic feet per second. If this supply be much diminished, the working of the fire is greatly retarded, and its attendance rendered much more difficult. Other things being equal, the time occupied in smelting a certain amount of ore is governed directly by the amount of blast given, within certain limits—that is, with a strong blast the smelter runs a heavy fire; with a weak blast, a light or small fire, and makes lead accordingly. The size of the fire must be proportioned to the capacity of the blast to penetrate it thoroughly. As an example, to show the importance of this point, I give the result of an experiment made at the Granby Co.'s furnace, in South-West Missouri. With two eyes, otherwise alike, and run by the same smelter, but one supplied with a 2½-in. tye, and the other with a 2-in. ditto, there was a difference of five hours in the respective times occupied in smelting a "tour" (3000 lbs.) of galena. The pressure in this case was one-half in mercury; the times, seven and twelve hours. As a rule, it would seem that the furnaces here work with too low a pressure. The blowing-machinery is not generally of a high grade, either as regards efficiency or economy. Until recently the bellows was the only means employed for furnishing blast. Two of these, placed side by side (or one alone), and actuated by a horse-whim, give—in connection with the wooden pipe, which serves the double purpose of conductor and regulator—a tolerably effectual blast. The fan, however, driven by water-power or steam, is a decided improvement upon that. The current of air is far more steady and even, and the attendance of the fire is by so much easier.

Before leaving this subject, it will be in place to remark that in the experiments made with the American hearth at Bleiberg the blast was introduced at three different points, instead of through a tye, and the change was attended with very good results. The air penetrated the mass more thoroughly and evenly, and the labour and care necessary on the part of the smelter were in consequence materially lessened, while the percentage of lead obtained was increased. I understand that this plan is now being tried with the Scotch hearth at a furnace in South-East Missouri. There is no doubt, I think, that it will work well. A convenient arrangement for a furnace using the Scotch hearth, and one commonly met with, is as follows:—The stacks are placed side by side, having common partition walls, and giving each smelter a space of about 12 ft. wide: 5 or 6 ft. in front of the row of stacks runs a platform (say), 5 or 6 ft. wide, along which, behind the smelter, the ore is distributed; 3000 lbs., more or less, to each eye. At the smelter's left hand is a large box of charcoal, kept supplied by the stoker, and at his right are the moulds and room to pile his pigs of lead. Beyond the platform is the sluice-box, space for mineral, &c. In the rear of the stacks runs the "air-box," a rectangular wooden box, varying in size according to the number of eyes, and communicating with the several tyes by means of leather pipes, called "boots." The fuel used upon the hearth consists of charcoal and "eye wood." The charcoal may be of either

hard or soft wood, as circumstances direct. From 7 to 15 bushels are used in smelting a "tour" of mineral; the amount varying with the skill of the smelter, the purity of the ore, quality of the coal, strength of blast, &c. It is essential that all fine stuff shall be screened out of the coal, and that a sharp look-out be kept for the burnt lumps of clay from the cooling-pit. Any of the hard woods will make eye-wood (soft wood is consumed too rapidly), provided it is straight and splits easily. It should be well dried before using. It is used in pieces ½ in. to 1 in. through, and about 14 in. long. One labourer will split for three eyes. The amount consumed per eye per tour is about one-fourteenth of a cord.

The amount of galena smelted as one day's work is called a "tour," and varies somewhat in different localities and for different grades of ore. From 2600 to 3200 lbs. of good mineral are given; where the smelter is paid by the pig, 2000 or 2100 lbs. of lead is considered a day's work. For the lower grades of ore, containing much foreign matter, and therefore slow to smelt, one-half to two-thirds of the above is allowed. At every hearth there is a smelter and his assistant, called "front hand" and "back hand."

The manipulation is as follows:—In commencing operations the basin is filled with lead, and it remains full throughout the campaign, or, in fact, until it becomes necessary, from any cause, to remove it. Upon this lead floor, which later becomes a lead "bath," a fire is built of eye-wood and charcoal, and the blast partially turned on. After this is well under way, the "browse" (pronounced bruce), as it is termed (or residue from the last day's operations, consisting of the skimmings of the basin—i. e., oxide of lead, partially roasted galena, incipient slag, &c.), is thrown on gradually, alternating with charges of fuel; and before this has entirely smelted away charging with fresh galena is commenced. The "browse" serves the purpose of supplying the oxygen compounds necessary to the initiation of the series of reactions which constitute the "smelting process." Fresh supplies of fuel and ore are added at short intervals, the fire being at the same time stirred up and brought forward upon the apron, where the white balls of slag are separated and thrown out; then, after a handful of eye-wood is placed before the tye to distribute the blast, shoveled back again. When the fire has reached its limit, marked by the ability of the blast to force its way through the mass of wasting mineral and burning charcoal, the charges are reduced somewhat, and the fire kept as near that limit as possible. This, then, is the routine:—Mass thrown forward with the poker, slag eliminated, eye-wood put in, mass thrown back front of the fire turned up to view, and slag separated, also thrown up, fresh fuel and ore added. In six or seven minutes the fire shows signs of collapsing at the back, and the blast fails to force its way through the mass, coming out at the edges. The fire is again turned out, the fore-going separated, and so on *ad infinitum*. The lead trickles through into the basin, and as this is filled flows over, by the groove in the apron, into the lead kettle. From the accumulation here the pigs are moulded.

—The Technologist (New York) March.

THE SLATE TRADE IN AMERICA.

Although large deposits of slate have long been known to exist in the United States, but little has been done to develop them until within the past few years; yet they are now assuming pretty considerable dimensions. The slate region of Vermont consists of a belt of country lying about midway between the Hudson River on the west, and the foot-hills of the western slope of the Green Mountain range on the east. A strip of land, 20 miles long and 3 or 4 miles in width, having Poulney, Vermont, for its centre, would cover all the quarries of any value that have been opened. This belt lies, in fact, partly in Vermont and partly in New York. It is about 60 miles from Troy, and about 9 or 10 miles from the foot of Lake Champlain. The slate formation itself is much more extensive than this, extending the whole length of the slate. This deposit of argillaceous rock belongs to what is known in the records of geological history as the Devonian period, and, consequently, occupies a very low position in point of time in the scale of geological formations. This slate formation has an average strike (say) of north 15° east, with a very varying dip eastward, ranging from about 15° to 55°. The stratification of the beds is not, of course, uniform throughout. At some points it is very irregular, and, therefore, not adapted to the manufacture of good roofing-slate; at others it is remarkably even, and affords material in almost inexhaustible quantities for slate of the very best quality. There does not seem to be a very large admixture of foreign mineral matter accompanying the slate beds. Of those that are found, however, may be mentioned veins or threads of calc-spar or carbonate of lime, quartz, and now and then traces of iron pyrites, either in an arborescent or crystalline form. The former cut across the planes of stratification of the slate rock, and are often so numerous as to render the slate beds wholly worthless, in so far as the manufacture of roofing-slate is concerned; but, fortunately, these veins are only of local occurrence, and quite limited in extent, so that when, in the working of a quarry, they are encountered, they are considered an evil to be got rid of at a greater or less cost, rather than a permanent obstacle in the way of the farther development of the property.

The number of quarries at present in operation in the Vermont slate district is about 100, which may be divided according to their geographical position into distinct groups. In the Middle Granville group there are about a dozen quarries now being worked, all, with one exception, making roofing slates. The predominant colours of the slates manufactured in this district are red, purple, green, and variegated. Considerable pyrites is found—more here, perhaps, than in any of the other districts. It is well worthy of mention that in this group are located the only quarries of red slate to be found in the country, if not in the world. The slates obtained from it are of the very best quality, being very smooth, fine textured, and unchangeable in colour. They are used only for ornamental work, in connection with the purples and greens; and, on account of their scarcity, bear in the market nearly double the price of the ordinary coloured slates. The Jamesville and Hampton group is to the northward of that just mentioned, and likewise in Washington county, New York. The slates are here very irregular, both as regards colour and quality; mottled green, perhaps, predominates. As to texture, this group furnishes, upon the whole, a finer grained slate than the Middle Granville Quarries. The slate from this circle of quarries is shipped at Poulney, in Vermont, on the line of the Troy and Rutland Railroad.

The Poulney group, which is the most extensive of all, is still further to the northward, and situated in the State of Vermont. There are here about 30 quarries being worked, and devoted for the most part, with the exception of the Eagle Quarry, to the manufacture of roofing slates. From the quarries of this Poulney group the finest roofing slates in America is, perhaps, produced. The great body of them consists of fast-coloured purples and greens. The stock from which they are made is very fine grained; in fact, as good as any that the country affords. A large number of slates are made from these quarries. They are sent to the market, in greater part, from Hydeville, about midway between Whitehall and Rutland, on the Rensselaer and Saratoga Railroad. This may be considered the chief group in importance, as it is the central one in position of all the quarries in the district. At Fairhaven, to the north-west of Poulney, there are about a dozen quarries, some producing roofing slates and some producing slabs; and to the eastward of Fairhaven are the Castleton Quarries, producing all slabs. Of the 30 quarries that make up the Poulney group there is but one in the hands of an incorporated company, the rest being held by private owners; and, as an evidence of the value of the slate formation in this locality for roofing and other purposes, it may be remarked that some 20 of these quarries have been opened within the last three years, and nearly all of them are doing well. Among the Fairhaven quarries the Scotch Hill is the principal. This is in the hands of a Boston company. In the last, or Castleton division, are found, as the more prominent, the West Castleton, Cookville, and Billings quarries. It is the practice throughout the district that the slabs are worked by mill companies in many instances, not the owners of the quarries; they buy the stock in the rough from the quarrymen, and send it to market in the form of billiard beds, mantelpieces, and the like.

In the Vermont district quite a number of Welshmen are employed. They are very successful in their works, many of them having come

into possession of quarries, which they carry on themselves, and generally with success, owing, perhaps, to the fact that they thoroughly understand the business. As yet very little machinery is employed in getting out the slate from the quarries, or in splitting it up into sizes suitable for roofing purposes, though some attempts in that line are at present being made. Machinery is very extensively employed in finishing it for mantelpieces and other purposes.

The immense deposits of slate in Pennsylvania are extensively worked. The largest and most northerly of these is that situated in Northampton and Lehigh counties. The great shipping points for this region are Slatington and Walnut Port. In these two counties, Northampton and Lehigh, there are some 300 companies engaged in working slate quarries. South of this is the Peach Bottom region, in Pennsylvania and Maryland. From these regions is supplied most of the slate that comes to tide water. Slates from this part of the country are of a firm texture, split readily under the chisel, and are dark-blue in colour. Another slate region exists in Brownville, Maine, some 40 miles north-west from Bangor. The slates obtained from these quarries are of a uniform black colour, hard and durable. These quarries labour under the disadvantage of being some 40 miles from railroad or shipping point. These slates do not usually come further west than Boston, on account of the great cost of transportation, &c. Several railroads are, however, in course of construction, which will give an outlet for this industry.

FOREIGN MINING AND METALLURGY.

The French iron trade shows continued firmness. In the Haute-Marne there is a very satisfactory state of affairs, and all articles may be said to be in good demand. The Champagne committee of forgers-masters has held a meeting; no important decision was arrived at, but the meeting determined to pursue negotiations with the Government to endeavour to secure a suppression of the system under which canals are closed during the summer months. The meeting signed, besides, an application for a concession of a junction canal from the canal lateral to the Marne to the St. Denis canal. Satisfactory advice came to hand from the Moselle markets; producers of pig complain, however, of the dearth and scarcity of coke. Iron and white refining pig continue in very considerable demand; the forges receive a good number of orders, but some feebleness is remarked in the delivery of iron to Switzerland, where Belgian iron appears in competition. M. Labbé, of Gorcey, is understood to have concluded a contract for 700 tons of bolts for the Paris, Lyons, and Mediterranean Railway Company; the precise terms of the contract have not transpired. M. Ziane (director of the Providence Forges) and M. Lancelot (a banker at Monceau-sur-Sambre, Belgium) are soliciting a concession of ironstone mines in the arrondissement of Briey; these applications compete with four others put forward by MM. Labbé, Perlot, Collas Freres, and Schoeffner-Siegers. The proprietors of the ironstone mines of Gorginon, in the commune of Ars-sur-Dornet, have abandoned the concession granted to them by a decree of Sept. 27, 1868. On the other hand, two concessions have just been granted. The first has been made to a representative of the house of MM. de Wendel and Co., of mines of hydroxide of oolitic ironstone, situated in the communes of Neufchef, Knutange, and Lommerange; this will be known as the Neufchef concession. The second concession has been granted to the Denain and Anzin Blast-Furnaces and Forges Company, and comprises mines of hydroxide of oolitic ironstone, situated in the communes of Knutange, Fontoy, Lommerange, and Neufchef; this will be known as the Tillota concession. The Council of Administration of the Eastern of France Railway Company has been authorised to solicit from the French Government permission to establish two branches, to unite the system to Mont St. Martin, and to the line from Longwy to Sedan. The Mont St. Martin line will run to Halanzy, Belgian frontier; and the Mont St. Martin station, already rendered an important one by the proximity of five great blast-furnaces, will become a depot of the highest class, and will accommodate great metallurgical interests. After the establishment of a line from Esch to Longwy there will only remain a link of about two and a half miles to be constructed to unite the important Gorcey group to the European railway system. MM. Laurent Felix Remy, Felix Destre, Hembert, and others have obtained a concession of mines of argilliferous lead and other minerals, in the communes of Chabrignac, St. Bonnet la Riviere, and Lascaux, in the Corrèze.

There is not much change to report in the state of the Belgian coal markets, and no immediate modification in their condition appears probable. The demand is maintained for all good qualities, although several important houses hesitate to enter upon a renewal of contracts, hoping to obtain lower rates at a future period. It is a very general impression that the hopes of these firms will not be realised; stocks are much reduced, and in many cases have almost disappeared, while extractors are not likely to lower their pretensions. Coke is in more demand on French account than ever, notwithstanding the high price which it has attained. Coal has just been discovered in the neighbourhood of the southern extremity of the Cologne and Minden Railway; the bed is stated to be something over 5 ft. in thickness. The discovery was made by the Belgian Coal Soundings Company, which is about to make some soundings to the north of the Castrup station. All the leading Belgian iron works continue in full work; it could scarcely be otherwise, since their production is engaged until the commencement of 1871. There are complaints, however, that orders to be executed in the course of 1871 do not arrive very freely at present, although the numerous railway enterprises which have been projected can scarcely fail to assure a good future demand. The reduction in the price of steel rails is beginning to excite considerable attention in Belgium; it could scarcely be otherwise, since the Creuzot Works recently contracted to supply the Orleans Railway Company with 2000 tons of steel rails at 104. 6s. per ton, delivered at Salncalz. Another contract, concluded on nearly analogous terms, has just shown that the Salncalz affair was not an exceptional matter. Thus the Paris, Lyons, and Mediterranean Railway Company ordered last month from the Creuzot Works 20,000 tons of steel rails, at 104. 6s. per ton, at the works. Belgian industrial, of course see, in common with the iron trade of England and other countries, that the little difference which now exists between the price of iron and steel rails must tell largely in favour of the production of the latter, considering the economy which their use secures in the maintenance of permanent way. Indirectly and eventually, this latter circumstance must materially improve the position of railway property, and when good dividends find their way to shareholders railway extension must be greatly encouraged and facilitated.

The extraction of coal effected by the Spanish Crédit Mobilier at its Castile mines seems to have increased last year. Thus the Baruelo Mine produced last year 52,000 tons of coal, as compared with 45,000 tons in 1868, showing an increase of 7000 tons in 1869. The Crédit has acquired on favourable terms some new concessions, which will form an extension of the best beds, and which will facilitate working operations. The Valderrueda Mines still present a less favourable aspect; the want of rapid means of transport still renders it impracticable to give any development to the works undertaken some time since. The shareholders in the Malindano Mines Company have just held their general meeting for 1869-70 under the presidency of M. Debrousse. The results disclosed in the report presented indicated a sensible improvement as compared with 1868; while the value of the company's products has increased the working expenses have been reduced. The profits of the past year amounted to 65,334.1; of this sum 25,000.1 was distributed in November, 1869, in the shape of statutory interest; the redemption of 250 shares absorbed 5000.1, and 35,000.1 has been applied to the payment in the course of last month of a further dividend upon the shares at the rate of 7 per cent. per annum. Altogether, the return last year upon the share capital of the company would seem to have been at the rate of 12 per cent. per annum. The directors of the Grand Combe Coal Company have just reported progress for 1869. The production, which has been 447,500 tons in 1867, and 460,000 tons in 1868, rose in 1869 to 481,000 tons. The company is thus returning to an annual production of 500,000 tons, which it maintained from 1863 to 1866. The demand for the company's coal increased last year still more rapidly than the production, the sales of 1869, under the form of coal in a natural state, aggregated, and coke having amounted to 502,000 tons. The total profit realised last year was 79,334.1, showing an advance of 22 per cent. upon 1868, and 7182.1 upon 1867. The capital stock is for 1,000,000.1, and the directors are enabled to distribute 2. 8s. per share upon the share capital, this dividend absorbing 57,600.1.

Copper has been pretty well maintained on the Havre market; some hundred tons of Chilean, in bars, have changed hands at 68.7. 16s. per ton, Paris conditions. The German copper markets present little variation; transactions are not very numerous, and are confined to the strict requirements of consumption. The tone of the tin markets has somewhat improved. At Rotterdam as much as 78 fls. has been made for Banca, while Billiton has brought 77½ fls. The general tendency of the lead trade appears to be towards feebleness. At Breslau there have been some rather important transactions in zinc, but elsewhere there has not been very much doing in that article.

MINING IN NEVADA.—ENGLISH CAPITAL IN WHITE PINE.—According to the *White Pine News*, April 20, Eberhardt and Aurora Mining Company is the title of the English company formed in London for the purpose of purchasing the mines named in the title. The capital stock is for 500,000.1 in 100 shares, all of which has been subscribed. The price to be paid for the Eberhardt and Aurora South Mines is 300,000.1 (or about \$1,455,000), one-half in cash and the balance in shares—the latter to be retained until profits to the extent of 125,000.1 have been made and are divisible. The property has been thoroughly examined by the company's engineer, Melville Atwood, and by Thomas Philpotts, acting agent for a member of the company, both of whom left here on Monday for San Francisco, where their reports will be prepared and forwarded to London by Mr. Philpotts. If these reports prove satisfactory to the subscribers (and we have every reason to believe they will), the capital will be immediately called up and the sale consummated. —Engineering and Mining Journal.

GOLD MINING IN NOVA SCOTIA.—The El Dorado Mine, Wine Harbour, purchased last January by Messrs. Boak, Ross, Northup, Gishmore, and others, proves to be a valuable investment. The new belt now being worked is 15 ft. wide, and one third of which goes to the mill: 140 tons were crushed during April, in two lots of 70 tons each, the surface lot yielding gold at the rate of 6½ dwts. to the ton, and the next 11½ dwts.—in all, 61 ozs. Large reefs of quartz, yielding from 5 to 10 dwts. of gold to the ton, constitute the chief value

of Australian mines, and we anticipate a similar result in Nova Scotia. At Isaac's Harbour, the Gisborne Mine employs a large number of hands. Two shafts, 20 ft. by 20 ft., are now being sunk in the belt, 300 ft. apart, the intervening ground having been proved, by various trial shafts, to be rich in gold. A first-class mill, to be driven by a 30-ft. diameter water-wheel, will be completed by Messrs. Hattie and McPherson (the contractors) next month, by which time a considerable quantity of quartz will be ready for the stamps. Meanwhile small lots, about sufficient to cover the monthly expenditure, are conveyed to a neighbouring mill, the last lot, of 6 tons 13 cwt., crushed on the 3d instant, having yielded 28 ozs. 12 dwts. 21 grs. of fine gold.

IMPROVEMENTS IN SURVEYING INSTRUMENTS.

An improvement in instruments for mining and other surveying has been effected by Mr. WILLIAM LINTERN, mining engineer and surveyor of Pontypridd, South Wales, by which the true meridian is made the fixed base line of the map, or plan, instead of the magnetic meridian. It is well known that the declination of the latter meridian alters at the rate of about 1° in eight years, being at that rate moving towards the true meridian; and it is very obvious that, in any case where the magnetic meridian is treated as an *invariable line*, the consequence of its variability upon the correctness of all plans so made must, in the course of years, be serious; and as 20 years is but a small portion of the life of some collieries and mines, and as the plans of such properties are being made, and added to, over the long period of their existence, it is certain that the consequent accumulating error must be very large in the course of time from this cause. Nor is it practicable, with any reasonable expenditure of labour, to make the correction by computation, even when professedly attempted, for the number of computations to be so made in any periodical survey would be so large that the probability is they would be, in the majority of cases, disregarded and passed over, as at present.

The way Mr. Lintern effects the improvements is by having an adjusting limb, in the compass-box of the instrument, moving close upon the divided ring, to which the needle is ordinarily set. This adjusting limb is provided with a vernier, divided to minutes, and which is adjusted to the bottom plate of the dial-box, a small portion of which is divided to 1° for the purposes of this arrangement. This limb carries a zero line in prolongation of the zero of the vernier, and it is kept set to the proper number of degrees and minutes, representing the correct declination for the time being, and it counts from the ordinary zero of the instrument, and can be altered either quarterly or half-yearly, as may be determined upon, so that the angle between this adjusting zero and the ordinary zero of the instrument is always regulated to measure the varying declination.

In surveying with this improved instrument, the needle will always be set to the adjusting vernier zero line, instead of to the ordinary zero of the instrument, and in this way the ordinary zero represents the true north, and all readings are then made in reference thereto, and are as easily effected as by the ordinary manner of working, it being, in fact, precisely the ordinary way of reading. If, then, the line placed upon the map represents the true north, the reading entered in the book will come right by placing the protractor on that line, as it is ordinarily placed on the magnetic line; and by continuing this process of working at the surveys the magnetic error is completely overcome and provided against. If, then, each map has a pair of columns drawn, in one of which is entered the date of each survey, and in the other the amount of magnetic declination to which the instrument has been set for the survey, the plan will give its own evidence as to how the corrections have been carried on, and it will be practicable to adjust the surveys for 50 years hence, so that they shall accord correctly with those made at the present time, although the aggregate of the adjustments in that period will probably be upwards of 6°.

Mr. Lintern also proposes an improvement in the construction of Protractors, which consists of a parallel frame of two side bars fixed to, and moving with, the vernier bar instead of the folding arms and pricker. In using this construction the different readings are not pricked off by marks in the paper, but the frame is set to the proper reading, and either one side or the other will be convenient for placing to it the set square, or the parallel ruler, whichever is used, and the line is then run off at once to its proper place, the instrument presenting a steady bar at the exact angle required from which to lay down the line, and the pricking the paper is thus avoided. The protractor is made with a groove on the face of the circular ring instead of the rack and pinion motion, and has the clamp and tangent adjusting screw, as the theodolite. This construction gives facilities for greater dispatch in working, combined with greater accuracy, and avoids the marking the paper usual with the other kinds.

IMPROVED SAFETY-CAGE.—A simple and efficient form of safety apparatus for the prevention of accidents in coal and other mine shafts from the breakage of ropes and from over-winding has been invented by Messrs. DENTON and WHITAKER, of Leeds. It consists of claws, which are made to grip each side of the guide-rod by the use of a coiled spring. Whilst the cage is in motion with the rope sound the pull upon the spring prevents its action, but in case of breakage the spring is released, the claws take into the guide-rods, and the fall of the cage is arrested. The arrangement for preventing over-winding consists of a simple latch, held in position by a spring, and in case of overwinding the back end of the latch comes against a stop, and lets the ring connecting the rope with the short chains of the cage escape. The apparatus has been very favourably spoken of by practical men who have seen it in operation, and it is anticipated that its simplicity, and consequent cheapness, will ensure its very extensive adoption.

ROTARY STAMPS MILL.—A rotary pulverising and amalgamating quartz mill, which has been successfully worked in California and Nevada for the past nine years, is at present being introduced by Messrs. MOREY and SPERRY, of New York. It costs nearly one-half less when put up ready to run than the straight mill. It can be put up at the mine ready to run in three days, and, with good ore, will pay for itself while a straight mill is being erected. It is built in the most substantial manner, and of the best material. Each mill is put running at the shop, so as to avoid all annoyance of bad fitting or lack of parts. These mills are cast in sections, so as to be easily transported. If the mine does not pay the mill can be taken down, and removed without damage. The wearing parts are so arranged that they can be duplicated at any time. Each section is faced off, and 1/2 in. of wood put between, thus avoiding the loosening of nuts and bolts, and the granulating and weakening effect produced by the jar. The weight of stamps is from 500 to 600 lbs. The shoes and the dies are made of the best white iron. The stamps revolve while being raised by the cam, consequently there is but a small amount of friction, and as they continue to revolve until they strike the die, both the shoes and dies are kept square on the face, doing more and better work than the straight mill. The stamps, dropping one after the other, force the pulp or rock around the mill, distributing it so that each stamp has an equal amount of rock. The speed of these mills is from 100 to 110 drops per minute. It has more screen surface than the ordinary mill, and is better protected, the rock being fed in at the hub, or centre. It does not come in contact with the screens until it is partially crushed. It is considered that a light stamp with a quick drop does the best work. Several improvements in detail made in this mill are considered to give it great advantage over the old style of mill. It is cast in sections, while the old mill had columns; the gear is taken from the top and put nearer the base, giving less vibration; it is made much heavier; the guide-boxes for stems are of oak; the wood packing between the sections to take off the jar; besides, many other little annoyances are obviated.

CORNISH PUMPING ENGINES.—The number of pumping-engines reported for April is 18. They have consumed 1221 tons of coal, and lifted 9.3 million tons of water 10 fms. high. The average duty of the whole is, therefore, 51,700,000 lbs., lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Cargill Mines—Michell's 72 in.	Millions	67.1
Great Work—Leed's 60 in.		56.9
North Wheat Croft—Trevelyan's 80 in.		62.0
West Cliverton—Hawke's 80 in.		53.1
West Wheat Seton—Harvey's 85 in.		64.0
West Seton—Tregunna's 70 in.		61.4

The Main, from New York, has brought \$25,000 in bar silver from the South Aurora Mine, and \$4000 from the Eberhardt.

Meetings of Mining Companies.

CEFN CONSOLS LEAD MINING COMPANY.

The first general meeting of shareholders was held at the offices of the company, No. 31, Threadneedle-street, yesterday, Dr. COLLIS BROWNE in the chair.

Mr. T. R. COMYN (the secretary) read the notice convening the meeting, which stated that as the first ordinary general meeting of the company must be held in August, when the balance-sheet will be presented to the shareholders, in compliance with section 91 of the Articles of Association, no accounts will be presented at this meeting, but a report of the state of the mine, &c., will be submitted.

The CHAIRMAN said it afforded him much pleasure to present to the shareholders a very satisfactory and explanatory report from their consulting engineer, Mr. Josiah Hitchens, which he would ask their secretary to read.

The report was as follows:—

June 8.—It is now some days since I arrived here, and my examination of your mine being concluded I am fully informed as to the surface and underground exploratory work done, and the discoveries made and prospects opened out, ensuring the realisation of others more valuable before long, the consideration of which, together with such suggestions as I may have to offer with a view to the most profitable trials for the earliest returns, will constitute the groundwork of the following report. Although as yet but comparatively little has been done, it being only 4½ months since the commencement of your operations, that little, in my opinion, clearly points to an important issue; in other words, a very valuable mine, of which I think you will be convinced by the statement that I have to submit, necessitating only a few plain explanatory particulars, and so best I am sure you will say. Having in a former report (written at the time when the present company was being formed) explained to you this mine comprises three lodes, with workings on them, also their relative distances from each other, as well as that the mineralogical characteristics of their surface outcroppings, and the constituent general principle and accompanying conditions of the time rock in which they occur, are the same as observable in some, indeed many, of the best lead mines in Wales, it would be objectionably superfluous to go over the same ground of explanation again, notwithstanding the great importance of such facts. I shall, therefore, confine myself chiefly to the particular considerations just mentioned, as being the ground on which what I am now only required to say, and I shall commence with the north and south lode. The workings on this lode, by shaft and levels in the usual way, are about 12 fms. deep, which are cleared, the shaft being made a good footway (as compared to what it was before), with good ladders, and the levels rendered easily accessible, the bottom one having been driven south on the lode 40 fms., and north from 12 to 15 fms.—that is to say, on the lode, allowing nothing for out of the way driving, which says but little for the mining intelligence of the former workers; there being also an intermediate driftage on this lode for a little way, calling for no particular remark, however. Before the clearing of these workings little only could be seen of this lode; but my opinion of it has been all along highly favourable, going by no other evidence than the shaft burrow, containing good stones of lead left by the former workers, not overlooking the very congenial character of the whole of the stuff (that is to say, the produce of the lode), and more particularly attaching importance to the gossanous portion of the same, which is very desirably constituted; the depth of the present workings, not being able to work below having no machinery, and the water from the lode being quick, which is to be very favourably considered, for (as is well known) most of the productive lead mines in Wales are very wet. How to reach the course of ore that there undoubtedly is, in my opinion, below, and also work the same to the best advantage deeper, is an important question, although an easy one to answer. I recommend the southernmost of the two shafts on this lode to be enlarged, and made a good one for going to any depth required. The engine to be put up for the purpose of sinking the level, and the level itself, I have no hesitation in saying, are aware, one of the east and west lodes, is to be easily rendered available for working the north and south lode in question by flat-rod connection in the usual way. I will only further remark, touching this lode, that it is in my opinion a very valuable one, only requiring a little deeper development for realising that opinion. Attention will next be directed to No. 2 east and west lode (south of the one that the new shaft is sinking for), the workings of the former parties being 12 fms. deep, which have been cleared and rendered easily accessible, and the shaft burrow, containing good stones of lead, the bottom one not being extended many fathoms. This No. 2 east and west lode is also a large one, from 5 to 6 and 3 ft. wide, with a back (surface outcropping) of strong and altogether very desirably constituted gossan, presenting a greatly improved appearance in the workings below, which although so comparatively shallow (12 fms. deep only) have produced many tons of ore. This lode is much talked of by the miners of the district as being the one that is going to do great things, and I have no hesitation in saying, that it is indeed a most masterly lode, and in the waste heaps at the surface good stores of ore are to be found, the whole of the produce being of a highly promising character. I shall only further remark on this lode that the chances greatly preponderate in favour of its proving a very productive one. To sink deep enough to be in the main body of ore an engine will be required, but to get down some fathoms below the present workings, independently of machinery for pumping, would not, perhaps, be found difficult at this time of the year, and, therefore, its being done—might lead to such important improvements, indeed such a discovery of ore (although the upper and poorer portion only of the main body), as would greatly enhance the value of this mine. Doing what I have advised will render necessary the employment of a force of four men, involving no great extra cost—say, 20s. a month, timber, &c., included—the only mechanical means required being a common tackle, costing a mere trifle, rope included. With this No. 2 east and west lode only, or the north and south one before referred to, Cefn might fairly claim to be considered a very valuable mine. Consideration will next be brought to the No. 1 east and west old workings, and the ore ground to be seen in going through them, on the strength of which this mine was bought, and the present company formed for effectually working it. There is an old shaft in communication with these workings, the depth of the same varying from 7 to 8 and 10 fms., their extent being about 25 fathoms, speaking, that is to say, of the main portion of the workings where the ore is. They are now all throughout easily accessible, having been cleared, and in places widened and deepened, more particularly at the eastern end of them, the sinking being 9 ft. deeper than the other points, and allowing the ore to be holding to the depth sunk the best specimens being got from the very lowest point reached; but there being only a portion of this ore formation in the small sink in question, its value is not to be anything like correctly estimated, nor was there much ore got, although enough, and of such a character and quality as to justify the expectation that there is plenty below where it came from. This ore formation (unlike the two lodes before referred to) is peculiar in character, making large vugs, here called "loughs," which widen out more or less towards the surface, their connection being kept up by "joins" varying in width, but for the most part small, comparatively speaking. The ore ground throughout these workings, already representing a length of 22 fms., seems to be of the character described, looking at its variableness, showing in particular places much better than others, which may be the top portions of a series of "loughs," the width and thickness of which remain undetermined, on account of the ore being mostly in the bottom of the workings, above having been taken away, of course, by the former workers.

The first work on this lode, which was done in the year 1862, was in driving and sinking, and that they will prove productive, some of them very abundantly so, I have the greatest confidence in believing. This, I am told, was the case in Bodolwyddan, which for many years yielded very considerable quantities of ore, and ought by fair play to be working at the present moment, being in the same time rock range, and touching which an old tributor, now working in this mine, has told me of as much as 5 tons of ore having been broken by himself and fellow-partners at one blast from the ore formations in that mine. The same man (a very respectable character, and intelligent miner) also telling me the formations of ore in this mine are much stronger and more productive than in Bodolwyddan at similar depths. Such important matters will, however, before long undergo practical testing—say, in about four months—when the new shaft now in course of sinking is down 20 fms., which will admit of driftages for opening out valuable discoveries, and the ore formations now dormant in the upper workings being wrought to the best advantage, from which it seems safe (very) to calculate on getting a good quantity of lead, looking at their extent, which, as before intimated, is about 22 fms. The new shaft is being sunk with all possible force, being in rock, however, just now not in favour of satisfactory progress, I am bound to state, but for that it would have by this time been 18 fms. deep, whereas it is only 16 fms., there being 4 fathoms more to sink for the completion of the first lift (20 fms.); being so delayed is an annoying, important result depending thereon, in looking forward to which I have not the slightest misgiving, but, on the contrary, feel very certain that they will realise expectations. In addition to the exploratory operations particularly carried out in hand, which might not be left unnoticed, although so far unattended with success. At about 40 fms. to the west, and on the run of the No. 1 old workings, there has been a shaft cleared and sunk 8 fathoms, at which depth a level is driving on a promising branch (here called "joint"), which is carrying a little ore, and therefore more likely for not being far off from connection with a productive "lough." Still further west, and on the same run, another shaft has been sunk, being between 2 and 3 fms. deep, but which is now dormant, and right, too, there being other places offering much greater inducements for trial. From the various operations carried on, as particularly intimated, it is clear that much activity has been the rule, the company's money not having been paid away for nothing. At the surface, the work done is quickly particularised; there has been built a small office, room for materials, and powder-magazine, and there is a carpenter's working place, also saw-pit, the ground for all surface requirements having also been fenced off. Having now brought you acquainted with all done underground and above, and furnished you (as I hope it will be thought) with a sufficiently explanatory statement to enable you to come to a correct conclusion on the merits, prospects, and chances of this mine—in other words, the most probable issue that awaits it—there remains nothing more for me to say by fair play. I cannot, however, be silent before saying that the good chances of Cefn greatly preponderate in its proving a valuable mine—indeed, a rich prize, leaving fully justified in predicting with certainty such an event being clearly in view.—J. H. HITCHINS.

The CHAIRMAN said it would be seen by that report that there were five different points of operation, each of which presented most encouraging features. The large laminated and foliated leaf of the lead, as found in this mine, first attracted his attention, for he knew that it was impossible to form crystals without a large body of material to develop them. The moment he saw this peculiarly favourable formation he expressed a confident opinion that wherever such crystals were found there must be in connection an enormous body of metal. But, in addition to this, they had the fact before them that from the limited explorations made large quantities of galena had been raised. Its character was such that it required but little crushing, and was economically developed. There was everything to make them thoroughly satisfied with their enterprise, and there could be no doubt that with the energy, efficiency, and economy ensured by the arrangements completed, Cefn Consols would at no distant date prove an important and highly remunerative mine. (Hear, hear.) Although, as stated in the notice convening the meeting, the balance-sheet, showing the financial position of the company, would not be submitted until the ordinary general meeting in August, yet it would, no doubt, be satisfactory to the shareholders to know that the funds were ample to meet all immediate requirements; all they wanted was time to complete the necessary preliminary operations, when they would be able to submit a most satisfactory statement as to the condition and prospects of the mine. (Hear, hear.) Mr. T. E. W. THOMAS directed attention to the fact that deposits of lead ore in the limestone formation were somewhat different to those in slate rock, inasmuch as in the former the ore was found in greater bulk, and not intermixed with the component parts of the lode. The ore required little or no dressing, and was rendered merchantable at but little cost. After some further discussion, upon the proposal of Mr. F. MAPLES, a cordial vote of thanks was passed to the chairman for the satisfactory information he had afforded. A similar vote was also passed to the directors and secretary. The meeting then separated.

GONNESSA MINING COMPANY.

The annual general meeting of shareholders was held at the offices of the company, No. 6, Queen-street-place, on Wednesday, Mr. HENTY in the chair.

The reports and accounts were adopted, and the retiring directors and auditor were re-elected.

The report stated that the quantity of ores actually returned from the mines during the past campaign has been—Lead, 3408 tons, of the gross value of 30,662. 12s. 4d.; calamine, 11,107 tons, 44,771. 3s. 8d. = 75,433. 16s.; besides which there was some increase made in the stocks of calamine earths. After charging against the return the whole amount of 4699. 13s. 4d. (including not only the cost of the working costs, but a considerable amount of outlay incurred in various preparatory works), there remains a balance of expenditure of 1657. 19s. 2d., which has been carried to the debit of the profit and loss account. In explanation of the above balance of expenditure, it may be interesting to state that the accounts of the zinc mines showed an excess of costs over returns of 4407. 8s. 6d.; whereas on those of the lead mines there was a profit of 6711. 18s. 4d.; reducing the amount to 3966. 10s. 10d. To this interest, discount, &c., are added, 1271. 19s. 6d.; expenses in England, salaries, &c., 734. 6s. 1d. = 2157. 16s. 7d.; less balance of exchange account, 958. 16s. 5d.; leaving 1197. 0s. 2d.; balance of expenditure, 1657. 19s. 2d. About 2000l. is charged in the accounts of this year, on account of costs incurred in the previous campaign. The actual loss, therefore, on the years 1868-9 is a little over 3000l. The balance to the credit of the profit and loss account at the end of the previous year was 9904. 12s. 7d.; after deducting from which the above sum of 5165. 19s. 2d., and 421. 9s. paid for income tax, there remains a credit balance of 4699. 13s. 4d. to be carried forward. It was recommended that 25,000l. be raised by the issue of 5000 additional shares, of 5l. each, such additional share to be entitled to a preferential dividend of 10 per cent. per annum on the amount paid up per share, out of the first profits, and, in addition to such 10 per cent., to participate rateably with the existing shares in any surplus profits remaining after payment of such preferential dividend. Several large items of outlay, which had previously been in suspense, have now been brought into account, showing the large amount of capital employed in the transport service. In view of the necessity for raising further capital, the directors thought it expedient, before deciding upon any recommendation to the shareholders, to have a careful and minute examination of and reports upon the whole of the company's property, by Mr. Ectham and Mr. Schmidt. Their reports are of the greatest interest and importance, and cannot fail to lead to the conclusion that the company possesses a most valuable property, and one requiring only to be properly developed to yield the most satisfactory results, more especially seeing that the large amount of ore already obtained has been returned from very limited portions of the concessions.

The meeting was then made Special, and a resolution unanimously passed, approving the proposal of the directors to increase the capital of the company by the creation and issue of 5000 additional shares, of 5l. each, such additional shares to be entitled to a preferential dividend equal to 10 per cent. per annum on the amount paid up per share, out of the first profits, and to participate rateably with the existing shares in the division of any surplus of profit after payment of such preferential dividend. It was also decided that the directors should take such steps as may be necessary for the purpose of altering or adding to the Articles of Association, so as to authorise the company to carry into effect the above objects.

A vote of thanks was unanimously passed to the Chairman, directors, and the managers—Messrs. John Taylor and Sons—for their attention to the interests of the company.

THE RHINE MINING COMPANY.

The first ordinary general meeting of shareholders will be held to-day. The report to be submitted states that the company was registered, with limited liability, under the Companies Acts, 1862 and 1867, on Feb. 12, and the nominal capital was fixed at 30,000l., in 15,000 shares, of 2l. each. Of this number 12,900 shares have been allotted up to the date of the report, and the deposit of 5s. per share has in every case been paid. Capt. Joseph Garland entered on his duties as manager of the mine at the end of February, and under his supervision a large amount of preliminary work has already been accomplished. Captain Garland favourably reports on the mines, and is of opinion that the lead lodes in particular will yield satisfactory results when a greater depth is reached. Of the copper lode he cannot speak as yet, but he is pursuing works of trial, with the view of interesting it. The lease of the property has been duly conveyed to the company; it was originally provided that the lease should expire on December 31, 1871, but the directors have secured an extension of time for a period of six months beyond that date, on agreeing to the directors to pay 62l. 10s. for such privilege. Should the company determine to continue the working of the mines at the expiration of the lease, the property will be made over to the company in perpetuity on payment of a further sum of 9000l.; but in case the mines shall have been proved less productive than was anticipated, the shareholders will be under no obligation to continue working. The works at the mines are being conducted with as much vigour as possible, consistent with economy, and the directors have every reason to hope that the capabilities of the mines will be fairly tested within the prescribed time.

NERBUDDA COAL AND IRON COMPANY.

At the general meeting of shareholders, to be held on Wednesday next, the report of the directors and statement of accounts will be submitted. The directors draw attention to the opening throughout of the Great Indian Peninsula Railway to Jubbulpore, and its junction with the East India Railway. The line passes 12 miles from the company's pits. In addition to the expected demand from the adjoining railways, the directors have received applications for coal from remote districts, which they expect to supply when the branch line from Ghorwara to their pits has been completed. Mr. C. C. ADLEY, C.E., has been appointed manager, in place of Mr. Simpson, who has returned to England.

With regard to the mine, Mr. N. Wollaston, the acting manager, writes—Owing to there being no market for our coal, very few men were employed until October, when coal sales began to be made to the contractors of the Great Indian Peninsula Railway Company. It was necessary to employ a large number. I am now giving work to about 100 men and boys, and all their cart is at once taken away by carts. From January to December 30 I find 584 tons of coal have been supplied, and 2125 maunds of lime. Owing to there being no European here since I have been in charge of the works, the superintendence of the mine has devolved upon myself, and lately has become a very heavy extra responsibility. A few of the pillars left to support the roof are riven from top to bottom, and the cleavage of the coal is at a great dip, some of them have begun to slip. I have been obliged to use timber props, and would some brick pillars, in case they should give way. As soon as Mr. Adley arrives, and if I am not required elsewhere, I shall re-survey the mine, and send you a new map. I have sunk an air-shaft in the top level, which answers its purpose admirably, as before it was made the intense heat in the workings was most oppressive and injurious to the workmen, but they are now cool and comfortable, excepting in some of the new drives, where another air-shaft will shortly have to be made. Coal is now only being cut in the top level and lowest seam. I have made several coal-screens with our 16-inch bar-iron stock, and Mr. Adley is sending me four others from Calcutta; they will all be required, as, of course, now that a large quantity of coal is being cut, there is a great deal of rubble and dust coal which must be brought out of the mine, and if not screened would ignite from spontaneous combustion; the dust is now thrown away, and the clean rubble stacked, and as soon as our line opens, there is no doubt but that we shall obtain a ready sale for it in the neighbourhood, for brick and lime-burning purposes.

[The Meetings of other companies are published in this day's Supplement.]

[ADVERTISEMENT.]

LEAD MINING AS AN INVESTMENT.

Messrs. LISCOMBE and CO., who have had nearly twenty years' experience in mining in Cornwall and Wales, are now in a position to recommend to their clients and the public investments in Lead Mines in Wales, at once devoid of risk, and yet which are certain of returning large and immediate profits. For great value of lead mining in Wales has long been known to the initiated; for from the time of Sir Hugh Myddleton (who, from the great profits realised from his Welsh lead mines, was enabled to bring the New River to London) to the present day, when the Right Honourable John Bright, M.P., the Right Honourable Milner Gibson (late M.P. for Manchester), and some late Mr. Cobden, M.P., realised their great fortunes out of their Montgomeryshire lead mines, Welsh mining has been the most successful and profitable of British pursuits. It is only, however, within the last three or four years that the public have come to appreciate the importance and unparalleled profitable nature of this industry. The Van Mine, which, scarcely more than a year ago, was purchased for little over 20,000l., is now selling in the London market for upwards of a million sterling; and the statistics which Messrs. LISCOMBE and CO. are prepared to supply show that upwards of two millions sterling profits have been realised from Welsh lead mines during the last eighteen months.

Among the most important of existing mining enterprises in Wales are the ABERDOVEY LEAD MINES, situated in the heart of the lead region of the Principality, equidistant from the Van Mine, the Lisborne Mines, and the Carnarvonshire Mines. Shares in the Aberdovey Lead Mines, which have made large returns and profits, and which are supplied with a full plant of machinery and materials, are now purchasable at 1/4. If the mine should be attended with success similar to that which has attended the Van Mine shares will, within a

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—J. Roberts, June 8: In the No. 2 adit and the flookan has thrown the lode entirely to the left hand, and consequently the whole of the lode is standing. On this account you will be able to effect a communication to the deep adit in a very short space of time, as in a little more than a month this level will reach the high backs stoped up from that level; the stopes behind this end continue to yield full 1½ ton of lead per fathom. We have commenced stoping in the bottom of the 10th with two men. The ore-bearing part of the lode here is about 5 feet wide, and will stop at a good profit.

BEDFORD UNITED.—James Phillips, June 9: We have communicated the 103 fm. level, east to the winze, sunk from the 9th, but have not been able to take down the lode; we shall do this in time to report the value next week. The lode in the 103 fm. level west is split; the main parts of the lode being near, we are driving by the north side, and also in the 90 east, just over it, is not quite so thin as last reported; it seems to be very irregular near the gossan. Very little has been done during the past week in either the 50 or 63 east ends, most of the men employed in those places having been removed to assist in holding the ground between the 60 and 66 as quickly as possible; after this is accomplished the driving of those ends will be immediately resumed. The 13 east end, on the Wheel Betsey lode, has intersected a large gossan, which has cut off the lode; the men are now employed stoping the ground already laid open, which is worth 6s. 7d. per fathom.

BLUE HILLS.—S. Bennett, J. Andrews, June 4: Claridge's shaft progresses much as usual; the lode is easy for sinking, and the lode unsettled, with occasional stones of tin. In the 66, at Letcher's, we have commenced opening out east, and above the level, on one of the small veins, intersected some 13 to 14 fathoms north of the shaft, and find in the rise some small but good stones of tin. The lode in the 60 winze having struck down much more perpendicularly than it at first appeared to do led to the supposition that the branch referred to in the 66 may possibly be a part of the lode, only very small at that point. The lode in this winze, and also in the 50 east end, just over it, is not quite so thin as last reported; it seems to be very irregular near the gossan. Very little has been done during the past week in either the 50 or 63 east ends, most of the men employed in those places having been removed to assist in holding the ground between the 60 and 66 as quickly as possible; after this is accomplished the driving of those ends will be immediately resumed. The 13 east end, on the Wheel Betsey lode, has intersected a large gossan, which has cut off the lode; the men are now employed stoping the ground already laid open, which is worth 6s. 7d. per fathom.

BRYNPOSTIG.—John Kito, June 9: There is a beautiful lode in the bottom end, at Brynpostig—I think the most beautiful I have ever seen in the mine. I cannot tell you how large it is, but not less than 6 to 8 ft., and it is streaming with water. It has drained all the water from the levels above, and for two or three days was more than our bottom lift could keep down; but it is falling off again now, and we shall not be troubled with it again in this level.

BUDNICK CONSOLS.—J. Rawling, R. Hill, June 7: The lode in the 23 is poor; there are seven pure pits of tin in the mine. We sampled a parcel of tin on the 28th ult., which realised 50s. per ton.

CAEGYXON.—June 7: The south lode, in the 50, has improved in cutting through it; the blende is more solid, and of a better quality. We have also an ore lode in the 50 cross-cut north (through lode), which is a good mixture of lead and blende. These two points are looking better than they have been, and there is every indication of further improvement. There is nothing new in the other levels.

CAPE CORNWALL.—R. Pryor, J. Davey, June 7: On Saturday, June 4, the following were set:—The 100 fm. level cross-cut to drive north of engine-shaft, by four men, at 14s. per fathom; the only alteration to notice in this end is a little increase of water. The 70 cross-cut to drive south of shaft, by four men, at 14s. per fathom; the end is bursting with water, and although kindly it makes it spare for driving.

CARADON CONSOLS.—S. Bennett, June 7: The Clymo's lode in the west end, at the 90, is 3 ft. wide, and yielding a ton of ore per fathom. The same lode east is 1½ ft. wide, spotted with ore throughout, but not enough to value. The No. 2 lode in the 75 east is 2½ ft. wide, and producing a ton of ore per fathom. There is no change to notice in either the shafts below the 90, or the winze below the 78.

CARDIGAN BAY CONSOLS.—Charles Williams, June 9: Pensarn: We have cut into the south part of the lode about 5 ft., which is chiefly composed of spar, slate, and blende, impregnated with lead ore of rich quality, showing indications of being near the rich shoots of ore known to exist towards the north of our present workings, and which I am daily expecting to intersect.—Eastern Adit: The lode in this level is 4 ft. 6 in. wide, principally composed of spar, carbonate of lime, gossan, muddle, and rich silver-lead ore, yielding the latter 1 ton per fathom, a good paying lode.—North Adit: The ground in this level is much of the same appearance as when last reported upon, showing strong ribs of lead and copper ore. We look forward with great interest to the intersection of the lead lode in this level, which will be from 60 to 70 fathoms deep, where, in my opinion, a good mine will be opened out on this ore lode alone.—Brynarian Adit: The ground in this adit level is still spare for driving, and consisting of slate, spar, blende, and small ribs of ore at times.—Boundary Shaft: The carpenters are now fixing the horse-wheel over this shaft, which will be completed and at work on Monday next. This will facilitate our progress very considerably. All surface work is being pushed forward as much as possible.

CARN CAMBORNE.—John Truscott, June 6: In driving the 85 west, on the north part of the lode, to get under the winze sinking in bottom of the 70, the lode is small and poor. In driving west, on the south part of lode, the lode is 4 feet wide, and worth for tin 10s. per fathom. East of this level, on the south part, the lode is of the same size and value (10s. per fathom). In driving east, shaft, at the 70, the lode at present is poor. The winze sinking in bottom, on the north part of the lode, is down 10½ fathoms, and worth for the breadth carried for tin and copper 20s. per fathom. In driving west on the south part the lode is worth for tin 12s. per fathom, and east for tin 10s. per fathom. No. 1 stop, in bottom of the 60, is worth for tin 10s. per fathom, and No. 2 stop is worth for tin 10s. per fathom.

CHIVERTON MOOK.—C. E. Tremayne, W. Bennett, June 4: Settling Report: A cross-cut to drive at the 105 fm. level, by six men, at 4s. per fathom. The 55 fm. level to drive west of Harris's shaft, by six men, at 3s. 5d. per fathom; the lode is 3½ ft. wide, composed of flookan, quartz, muddle, and stones of lead. The 55 fm. level to drive west of cross-cut, by six men, at 3s. 10s. per fathom; the lode is 4 ft. wide, worth 20 cwt. of lead per fathom. A stop in the back of the 55 fm. level, by six men, at 2s. 10s. per fathom; the lode is 6 ft. wide, worth 10 cwt. of lead per fathom. A stop in the back of the 55 fm. level, by four men, at 2s. 7s. 6d. per fathom; the lode is 7 cwt. of lead per fathom. A stop in the back of the 75 west, by four men, at 2s. 1s. per fathom; the lode is 3 ft. wide, worth 10 cwt. of lead per fathom. A stop in the back of the 75 east, by six men, at 2s. 15s. per fathom; the lode is 7s. 25 cwt. of lead per fathom, and 2 ft. wide. A stop in the back of the 75 west, by four men, at 2s. 10s. per fathom; the lode is worth 10 cwt. of lead per fathom. A stop in the back of the 65, east of old flat-rod shaft, by six men, at 1s. 5s. per fathom; the lode is 10 cwt. of lead per fathom. A cross-cut to drive at the 55 fm. level, north of Ward's shaft, by six men, at 3s. per fathom. We have to-day intersected another lode at the 40 fm. level, north of Ward's shaft, and have set to drive both east and west on its course; the lode is 12 in. wide, composed of flookan, quartz, muddle, with a little blende and copper. Our pay and setting passed off very satisfactorily.

CRENVER AND WHEAL ABRAHAM.—Wm. Kito, Wm. J. Paull, June 7: Wilson's Engine-shaft: We had the new capstan-rope brought to the mine last Friday evening, and had the stay and splices made against the Saturday afternoon, on once commenced about driving the lift to the 170, which was done against the middle of Sunday. We expect the water will be forced to this point by to-morrow morning; perhaps we shall have to add on another pump to get the water down about 2 fms. below the level, in order to cut ground for bearings and elstern, where we shall fix a bucket-lift.—Middle Engine-Shaft: The lift is dropped to the 170, and the water forced down 1 ft. below the back of the level. The supmen are now engaged clearing away timber and stuff from around the lift; when this is done we shall drop the lift 2 fms. more, in order to cut ground for elstern and bucket-lift, and shall fix a plunger at this point. All the other operations are without any particular change to notice.

CUDRA.—F. Puckey, H. Harvey, June 7: In the 142 end, west of Walker's shaft, we have cut into the main or south part of the lode 2½ ft., with no appearance of reaching the north wall. As far as seen the lode is looking very promising, and producing a little tin. In the 130, east of the shaft, the lode in the end is 3 ft. wide, a little disordered, and at the present time is unproductive for tin. The lode in the stop in bottom of the 130, east of No. 1 winze, is 1½ ft. wide, worth 16s. per fathom. In the stop in bottom of the same level, west of No. 2 winze, the lode is without alteration, and is very large, and worth in places 40s. per fathom. In the stop in back of the 130, west of the winze, the lode is from 10 to 12 ft. wide, worth 16s. per fathom. In the 117, east of the shaft, we are driving by the side of the lode; the ground therein is very favourable for progress. In the 105, east of the shaft, the last 10 fms. has been driven by the side of the lode. We now intend to cross-cut through the same to provide size and value. There is no alteration in any other part of the mine.

CWM BRIN.—June 7: The lode in the 45 fathom level, going east of the boundary, is 2½ ft. wide, composed of a light clay-slate, spar, and spots of lead ore, the ground wet and hard for exploring. The lode in the stop in back of ditto, 60 fms. east of drawing shaft, is producing about 8 cwt. of lead ore per fathom. The stop in the back of ditto, 35 fms. east of this shaft, will produce 1 ton of lead ore per fathom. In the rise over the back of the lode contains spots of lead ore throughout, yielding dressing work of a fair quality. The lode in the stop over the back of ditto, 25 fms. west of the engine-shaft, will produce 1 ton of lead ore per fathom. The lode in the 32 fm. level, west from the engine-shaft, is 1½ ft. wide, open and vuggy, containing spar, spots of copper ore and lead ore, worth at this time about 8 cwt. of the latter per fathom, and looking very promising. The lode in the rise in the back of the deep adit level is 20 in. wide, but of no value. The lode in Taylor's drift, going east of the boundary, has a similar appearance; only about 2½ fms. of ground remain here to effect a communication with the rise before described. The stopes over the back of this level will be finished in a day or two up to the bottom of Williams's level; but we have a small branch of ore going forth in the eastern end of the stop for about 8 ft. high, which we shall follow as long as it will pay for exploring. The lode in Taylor's shaft, sinking below the 30 fm. level, is 2 ft. wide, carrying a well-defined footwall and yielding some very good stones of lead ore; the ground is rather more favourable for sinking, and the water easy.

CWM GOG.—T. B. Davies, June 4: I am glad to say we have discovered the lode, west of Bary's cross-cut, and have opened on it, it presents a beautiful appearance, and we are very pleased to say we never did see a more promising lode, which has everything about it to warrant a speedy success. I should recommend to clear Hughes's adit at once, so that it might be prolonged to intersect the above lode (in depth), which will then merely on the surface pay a good dividend. If the dressing machinery were put up, the width of the lode I cannot exactly tell, but as far as we can judge it is about 6 ft., bearing lead all through. This discovery has amazingly increased the value of the mine. Everything connected with the mine is going on well, especially the burrows.

T. B. Davies, June 9: I am very pleased to say we are getting on well at the mine. The new lode is improving daily in No. 4. We have discovered the forepart of the No. 2 stop, which is much better than we expected to see. There are two leaders of lead, one on the heading-wall, and the other on the hanging-wall, solid; it is the best lead I have seen.

EXCELSIOR.—G. Rickard, June 8: We have passed through two branches in the deep adit, driving south, varying in size from 6 to 10 inches wide, consisting principally of capel and spar, letting out water freely; we are prosecuting this point of operation with a full crew of eight men, and good progress is being made.—Wheal Thorn Lode: The shaft sinking on this lode is at present not looking quite so well, owing to it being divided by a small horse of killas; this change we consider is only temporary, and we may reasonably expect in a few feet further sinking it will become quite equal to its former appearance and value.

DEEP LEVEL.—June 8: The lode in the 130 yard level, west of cross-cut, at Trustee's shaft, on the new vein, is 2 ft. wide, composed of clay, and producing large solid lumps of lead ore—a very promising lode, and from present appearances we believe we shall soon open out some good deposits of lead ore, as the levels are extended east and west upon the lode. The 120, driving east at this level, is in a lode 18 in. wide, composed of clay, and yielding good solid lumps of lead ore; the lode at this point looks promising for further improvement shortly. The 80 yard cross-cut, going south from Trustee's shaft to intersect the new vein, is progressing favourably, and is going out in a fine channel of ground; we meet with occasional stones of lead ore in the driving. We have every reason to believe that when the lode is cut at this point it will be found more productive than at the 120. We have commenced to drive a cross-cut south from the 174 to come under the Trustee's shaft; we have 23 yards to drive to come under the shaft, and about 4 yards to the south of the shaft to reach the vein, should the underlie of the vein continue the same to the 174 as seen at the 120; we have put six men in this cross-cut. There is no change to notice in the deep level south-west corner, and report the lode going south from the bottom of the pump-winze, on Pantyfrith vein, is 3 ft. wide, composed of limestone, clay, and producing occasional stones of lead ore, but not much to value. The lode in the 146, north from north shaft, on Pantyfrith vein, is 3 ft. wide, consisting of limestone, spar, and spots of lead ore, in good ground for driving.

DOLWEN.—J. Davis, June 8: The lode in the adit level increases in size and strength; the level is 5 ft. wide, and a portion of the lode remaining on each side untouched; I have started a cross-cut, to find the north or footwall. The new shaft is down about 6½ fms.; there is a branch of the lode in the shaft carrying small ribs of solid lead ore; I feel confident in my own mind that we are very close on a body of lead ore.

EAST BOTTLE HILL.—J. Eddy, June 8: North Lode: We finished taking down the lode yesterday; I am happy to say the lode has both increased in size and in quality, looking much better this taking down than when taken down about three weeks since. Looking at the appearance of the lode at this time, I have every reason to believe by continuing our driving a few fathoms further we shall find the lode to be of a better quality than it is at present. The lode is now about 4 fms. in the 140 west, and the ground in the present end is favourable for driving. We often meet with mineral branches crossing the end. Judging from this, and with this lode seen further west, to the depth only of 6 fms.—large and producing good stones of tin—I have no doubt when this lode is seen in the cross-cut, which will give a depth of 40 fathoms, it will also be found good and profitable.

EAST CARADON.—J. Truscott, June 8: Caunter Lode: The 130 east is poor. The 100 east is poor. Child's Lode: The 100 east is poor. The 100 west is worth 5s. per fathom. The 90 east is worth 20s. per fathom. The 90 west is worth 8s. per fathom.—Secombe's Lode: The 20 east is poor.—North Engine-Shaft: In sinking below the 40, on the course of Marke's lode, the lode is 2 ft. wide, and presenting a very encouraging appearance. In the 40 west, on No. 2 lode, the lode is large, producing a little muddle and copper ore.

EAST CARN BREA.—J. Rodda, June 8: We shall commence to take down the lode in Thomas's engine-shaft to-morrow. We have cut another branch cutting into the lode in the 50 cross-cut, north of the engine-shaft; water still issues freely from the breast of the end. The other points of operation are without change since last week.

EAST NEW WHEAL LOVELL.—C. Bawden, June 9: The ground in Bawden's engine-shaft is much improved, and good progress is being made in sinking. The ground in Moor shaft is also improved; we calculate in sinking 3 fms. more to have the rich East Lovell lode in the shaft.

EAST WHEAL BASSET.—J. Lean, June 9: There has been no lode taken down since the 130, so far for the month. The ground in the 130 east, driving towards the tin lode is slightly eased for driving. No change to notice elsewhere since reported on May 25.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennett, June 4: We have no alteration to notice in either of the cross-cuts. The lode in the 95 east is from 15 to 18 in. wide, kindly in appearance, and worth 1 ton of copper ore per fathom. The lode in the 75 east is 18 in. wide, worth 1½ ton of copper ore per fathom. We purpose trying the back of this level, because from indications that preceded the shaft, the lode in the 55 east is of a better quality than it is at present.

EAST WHEAL LOVELL.—Richard Quentrell, June 8: The lode in the 70, driving west, continues to improve, and is now worth 70s. per fm. I never saw the bottom of the mine looking better than to-day.

EAST WHEAL SETON.—J. Vivian and Son, H. Arthur, June 9: Cartwright's Shaft: In the 34 fm. level east the lode has increased in width to 2½ ft., and producing 2½ tons of ore per fathom. The ground in the 30 fathom level, east of the latter shaft, the lode produces occasional stones of copper ore. The lode in the 27 fm. level yields 4 tons of copper ore per fathom; but the eastern stop is not so productive. Basset's engine-shaft has been sunk to the 34 fm. level, and we are now preparing to drive this level, the lode being about 5 ft. wide, containing quartz, and prlan throughout a light-coloured flookan, which may be considered a favourable composition. In the flat-rod shaft, now about 12 fms. below the 20 fm. level, the lode continues to present a highly favourable appearance, being 5 ft. wide, containing a large proportion of quartz and prlan, with yellow copper ore scattered occasionally throughout. The lode in the 20 fathom level, east of the latter shaft, the lode produces occasional stones of copper ore.

FEDW.—J. Paull, June 4: The cross-cut south from the engine-shaft, at the 23, has been communicated to the old shaft on the main lode; we shall now cut through to the south side of the lode at this level to prove its full width (which has not yet been done anywhere in the mine), and at once also alter the 23 east and west of old shaft, to open up ore ground for stoping away. All other points connected with the mine are without change to notice.

GAWTON COPPER.—G. Rowe, G. Rowe, June 4: The part of the lode carried in the 55, east of cross-cut, at King's engine-shaft, is 6 ft. wide, producing very strong muddle, intermixed with good quality yellow copper ore and stones of tin, which we are separating from the copper part, and storing it upon the dressing floors for future treatment as soon as we have a sufficient quantity. The lode in the 82, east of the old shaft, is worth 3 tons of ore per fathom. The lode in Milford's winze, sinking below the 82 west, is yielding 6 tons of muddle and ore per fathom. The lode in the 70 east is worth 2 tons of ore per fathom. The lode in the 70 west is worth 7 cwt. of lead per fathom. The lode in the 70, east of the latter shaft, the lode produces occasional stones of copper ore.

GOREDD AND CEYXON LEVEL.—June 3: We have fixed ladders and stages in the 130, and so that access to the adit level can be had at this point. The men employed there are now sludging and repairing the same.—Coelia Gelyen: We are making satisfactory progress in re-opening this shaft to the adit.—Coelia E-Elthen: We have purchased a whim, which we shall commence to erect on Monday next.

GREAT FRON FOWNOG.—Wm. Wasley, June 2: The new engine-shaft is now 24 yards below the surface, and last Saturday I set to the men to sink for this month, or until the water gets too strong for barrels, at 6s. per yard, to carry the shaft to the hill side (18 ft. long and 10 ft. wide), and to pay all costs for drawing, &c., as usual. The lode in the 20, east of the latter shaft, the lode goes down about ½ yard every week, and I hope it will soon go down a little faster.

GREAT RETAIL LACK.—G. B. Odgers, J. Harris, June 4: The engine-shaft is set to sink below the 50 fm. level 9 ft., or the month, at 16s. per fathom; lode 18 in. wide, with good stones of lead. The 50 south, by two men, at 6s. per fathom; lode 15 in. wide, with good stones of lead ore. The stop above this level by four men, at 50s. per fathom; lode not looking so well, worth 8 cwt. of lead ore per fathom. The adit cross-cut to drive towards the large iron lode, by six men, at 3s. 10s. per fathom. We have to-day worked 10 tons of lead ore. We calculate we have at the surface from 15 to 20 tons of drogue lead ore, which we could not return for want of a crusher; as soon as the crusher goes to work this will immediately become available.

GREAT ROCK.—J. Kemp: The engine-shaft is much the same as when last reported, and is being pushed down with all possible speed. In the 18 east I put the men to cut through the lode south to see if I can find the ore part of the lode going down south of us; the lode is producing spots of lead, but not to value. The stopes in No. 1 winze, in bottom of the deep adit, east of engine-shaft, is looking rather better, and I am still in hopes that we shall find the blende in this stop again. The lode in No. 1 winze, in bottom of the deep adit, west of the deep cross-cut, is much the same, producing saving work, and a very kindly lode. We are rather short of water at present, in consequence of the miller on the river side above us pooling for his own use, but a shower of rain will remedy this at once.

GREAT ROYALTON.—Thomas Parkyn, June 9: The engineers are very busy in fixing the fly-wheel and fly-wheel shaft, and the moment this is done they will at once fix the stamp-axles, &c. The masons have nearly finished all their work, so that everything is being pushed on with all the dispatch possible. I

have men now sinking the engine-shaft deeper, so that we may have a full supply of water for the engine-shaft and dressing-floor. I have men sinking the whim-shaft on King's lode, which, with the north lode, is 1 fm. wide. The whim-shaft is 12 fms. east of the engine-shaft. I shall supply the stamps from King's and north lode until we get down the engine-shaft to the 20; then we shall instantly drive east towards the whim-shaft, which will be sunk to the 20. This will be 10 fms. in virgin ground, when I feel assured you will have a most valuable mine, as all the lodes we have seen are so much richer at the present bottom of adit, 10 fms. This sink of 10 fms. will lay open immense quantities of rich tin ground to take away, and with the present high price of tin large profits will be made.

GREAT SOUTH CHIVERTON.—John Nancarrow, June 6: The sinking of Gifford's engine-shaft has been continued without interruption by 12 men; it is now 9 fms. 2 ft. below the 50, and is still sinking by 12 men, at 27s. per fathom, and, although harder, it will be down 12 fms. below the 50 in about a month more, when driving towards the lead ground will be commenced at once. The ground is quite congenial for lead, and the best results may be anticipated. In the 50 west the lodes have not yet separated, but the end now looks more likely to become productive than it has been for several months. There is a much working in the back of this level at 9s. per ton. The 40 east is getting in towards Chapman's shaft; there is a fine-looking lode in the end, 4 ft. wide; we expected to have had lead by this time, but we cannot now be far from it. The stopes at the 20 has not altered much, and we are breaking lead and blende, just as we did last quarter. Our having to go up again from the 50, and sink the 40, is a great disadvantage, but the ground is so good, and the lode is so rich (although a work of necessity), for a considerable time prevented us from doing anything in opening out the mine below the 50, and the shaft, which is now nearly 70 fathoms from surface, would, but for this, have been down at least 90 fms., and the levels have reached the ore ground, and a good mine be doubtless opening out. This, however, I consider is only a question of time, and is being accomplished as fast as possible. The shaft is being sunk large enough for a double skip-road, and any pitwork that may be required.

GREAT SOUTH CHIVERTON.—J. Rodda, June 8: The shaftmen are laying tram-roads in the 16s. west of Lyle's engine-shaft, which will be completed by the end of this week, when the men will be put to drive a fathom or two further north to see if the main part of the tin lode is standing in that direction. The lode in the 154 west is still worth 6s. per fathom. In the 140 west the lode is producing occasional stones of tin. In this level, west of No. 2 cross-cut, the lode is worth from 10s. to 12s. per fathom. No change in the 125 cross-cut south, we are through the lode in the 125 cross-cut, north from Noel's shaft, which is about 10 ft. wide, composed of capel, prlan, muddle, and a little tin, but of no value. **GREAT WESTERN.**—Edward Rogers, June 8: Fisher's Lode: Michell's engine-shaft is down to the 30 fm. level; shaft eased and divided to this depth. In the winze sinking in the bottom of the 10 fm. level, the lode is 6 in. wide, worth 3s. per fathom. In the rise in the back of the 30 fm. level, the lode is 4 ft. wide, worth 15s. per fathom.—Middle Lode: In cross-cutting in the 30 fm. level we have passed through Fisher's lode, which is 6 in. wide, producing rich stones of tin; we expect there is about 8 ft. more to drive to cut the shaft. In the end driving east in this level the lode is 3 ft. wide worth 14s. per fathom. In the winze sinking in the bottom of the 20 fm. level, west of the shaft, the lode is 2½ ft. wide, worth 8s. per fathom.—South Lode: William's whim-shaft is sunk 10 fms. below the deep adit, and the men just commenced to drive west on the course of the lode. In the adit level driving west the lode is disordered by cross branches, but yielding work that will leave a profit on stamping. In the rise in the back of this level the lode is 18 in. wide, worth 8s. per fathom. In the winze sinking in the bottom of this level the lode is 1 s. wide, worth 5s. per fathom.

WHEAL LOVELL.—Charles Bawden, June 9: We have resumed sinking the engine-shaft, which will take the Trumpet Consols lode in sinking 3 fms. deeper, when we shall have a piece of tin ground to take away at a good profit. The foundation for engine-house is taken out, and the masons will soon commence building. I hope in the course of a week to have the 64-inch cylinder engine on the mine. Everything is being pushed on as fast as possible, having due regard to economy.

GUNSLAKE.—W. Skeels, J. C. Secombe, June 9: Engine-Shaft: This is now about 7½ fms. below the 48 fm. level; for this distance we have had occasional good stones of copper ore, but at present the lode is small and poor. In the 48 fm. level west the lode is 1½ ft. wide, worth 7s. per fathom for copper. The lode in the 36 fm. level east is disordered, and has been so for the last 2 or 3 fms., by small cross-cuts. The lode in the 48, east of Piper's winze, is 2½ ft. wide, yielding saving work; for the last 3 or 4 ft. the lode has been increased in size, and improving in value, and we think will continue to do so.—Isaac's Shaft: The lode in the 48 fm. level west is nearly 2 ft. wide, worth for tin and copper 4s. to 5s. per fathom. In the eastern end of this level the lode is 1½ ft. wide, worth for copper 6s. per fathom. In the 36 fm. level west, for the last 7 or 8 fms. driving we can scarcely say we have had any lode; but the branch or division in the ground by which the end has been driven has been letting out a quantity of water, and has drained the level above; from this we have considered the driving has been in its proper course, and we continued to expect the lode would have increased in size, and equal in appearance, &c., to that in the level above. The lode in the stopes in the back of this level is worth—No. 1, 12s. per fathom; No. 2, 9s. per fathom; No. 3, 14s. per fathom. The lode in the 23 fm. level west is 2½ ft. wide, worth for tin and copper 9s. to 10s. per fathom; and in the stopes in the back of this level it is worth—No. 1, 7s. per fathom; No. 2, 9s. per fathom.

GWYDYR PARK CONSOLS.—W. Smyth, June 7: Gwydyr Liffon: The sinking is progressing favourably in Sutton's shaft.—Gwydyr Park: We are getting on well with the sinking of the new shaft on Vuchelias. I am getting the timber for it; we cleared a little of the bottom, and find a good branch of lead on Hawkins's lode; the place is so full of stuff that I cannot tell much about it until the surface shaft is put through that we may clear the mine.

HAREWOOD CONSOLS.—T. Neill, June 8: The new engine-shaft is sunk 14 fathoms 4 feet; the ground is still favourable for progress, and is of a highly promising character for producing copper ore, and we may expect good results in cutting the lode.

HARWOOD.—Wm. Vipond, June 6: In the level or cross-cut the "backs" or "strings" have more mineral about them, and may be indications that we are near a well.

HUNSTON DOWN CONSOLS.—Jas. Richards, June 9: In the pump-winze sinking below the 140, west of Bailey's shaft, the lode still promises to improve; it is composed of muddle, healthy capel, quartz, and both tin and copper ore, worth 20s. per fathom. In the 140 east the lode is large, 6 ft. wide, composed of capel, muddle, quartz, peach, and copper ore, worth 2 tons, or 6s. per fathom, with good stones of tin ore. The lode in the stop in the back of the 130 east is worth 2 tons of ore, or 8s. per fathom. In the 110 east the lode is 5 feet wide, yielding a little ore. In the 100 west we continue to drive by the side of the lode in a favourable ground for progress. In the deep adit level south there is no alteration.

LLYWERNOG.—J. Davis, June 8: The men have now squared down 9 fms. 2 ft. of the engine-shaft, and the work progresses well.

LOVELL.—J. Nancarrow, June 7: We are clearing northward in the adit, and expect to reach the north workings shortly. We are making fair progress for the wheel of stamps.

LOVELL CONSOLS.—J. Nancarrow, June 7: The sinking of the north shaft is being pushed on by the men, and the progress is favourable. We have tried to sink the first lode discovered, and are again down to water. There is tin in both lodes that would do well if we had a stamps on the mine.

MAES-Y-SAFN.—June 6: In the 370, east of Grosvenor's shaft, there is no change to notice. The 350 west is improving a little; the lode is now yielding some good lumps of lead, and looks kindly to improve. The 310 west is still in broken ground. The 370, west of pump-winze, is producing a few good lumps of lead, and looks promising. The 350 east is showing a few spots of lead, and the lode is of a most promising character. In the winze east of this level, the lode is 2½ ft. wide, worth for tin and copper 10s. per fathom. The lode in the rise in the back of the 310 east is producing 1½ ton per fathom. The stopes in the bottom of the 310 west are producing 2 tons per fathom. The stopes in the back of the 310 east is yielding 3 tons per fathom. There is no change to notice in any other place throughout the mine. The mine is in fork, and the machinery working well.

MINERAL BOTTOM.—R. Nancarrow, R. R. Nancarrow, June 9: We have completed the sinking of the new shaft to the 55, and have a very good lode at this point; it is large, well-defined, and very promising, being 4 ft. wide, composed of quartz and flookan, and, judging from its general appearance, we believe that it will prove to be productive, especially in driving south under the run of lead ground gone down in the bottom of the 23. In the 23 end, north of new shaft, the lode has improved; it is a very pretty stratum of elvan, which is congenial for the production of lead. We are getting a nice parcel of silver-lead ore for the market.

MINERA UNION.—J. Nicholls, June 9: Brabner's Shaft: The lode in the winze in the bottom of the 80 yard level south is 6 feet wide, and worth 10s. per fathom.—Flue Shaft: The lode in the 50 yard level north is 12 ft. wide, and worth 12 cwt. of lead per fathom. The pitch in the bottom of the 40 north is worth 10 cwt. of lead per fathom.—Low's Shaft: The lode in the 60 yard level north is without change since last reported on.—Boundary Shaft: The pitch in the back of the 40 yard level south is worth 1 ton of lead per fathom. The pitch in the back of the 60 north is worth 10 cwt. per fathom. We have weighed off 16 tons 2 cwt. of the produce of last month, and are busy dressing another parcel for this month.

NEW CROW HILL.—A. Kent, T. Trelease, June 7: Our operations in the 100 cross-cut are progressing at a moderate rate, without any change to notice.—North Lode: At this present point we are pushing on the adit towards the lode, not having yet reached it since heaved by the caunter lode, as referred to in our report last week.

NEW PEMBROKE.—F. Puckey, J. Puckey, June 6: In the past month good progress has been made in sinking the new engine-shaft, and which is sunk 2 fms. below the 75 fm. level; the lode in the bottom of the shaft is 3 ft. wide, yielding good work for tin, and worth for the length carried (14 feet) 40s. per fathom. In the 75 end, driving east of the shaft, the lode is 4 ft. wide, worth for tin and copper 35s. per fathom. The lode in the rise in the back of this level, in the back of the 75 fm. level, east of the shaft, the lode is 2 ft. wide, and worth 12s. per fathom. In the stop in the back of the same level, east of Trustee's shaft, the lode is 4 ft. wide, and worth 16s. per fathom. In the stop east of Trustee's shaft, the lode is 3 ft. wide, worth 10s. per fathom, and looking promising for improvement. In the 65, or middle level, the lode in the end is disordered, producing good branches of tin and copper, worth 8s. per fathom. In the stopes in the back of the 65 fm. level, east of the winze, and above the slide, the lode is 4 ft. wide, worth for tin

COAL MARKET.—The fresh arrivals this week amount to 108 ships. The demand for household coal has continued steady, but prices quote a reduction of from 3d. to 6d. per ton. Hartley's have been nactive, and prices declined 6d. Hetton Wallsend, 17s.; Haswell Wallsend, 16s. 6d.; Stewart's Wallsend, 15s. 6d.; Eden Main, 15s.

Kellogg Wallsend, 14s. 9d.; New Belmont Wallsend, 14s. 6d.; Framwellgate Wallsend, 14s. 6d. Unsold, 17 ships; 25 ships at sea.

At the Swansea Ticketing, on Tuesday, 2509 tons of ore were sold, realising 20,557. 11s. The particulars of the sale were—Average standard for 9 per cent. produce, 85. 19s. 6d.; average produce, 13; average price per ton, 8. 3s. 10d.; quantity of fine copper, 326 tons 34 cwt. The following are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Per unit.	Ore copper.
May 10, 2334	2334	85 7 0	16	8 10 5	8	128. 9d. 263 15 0
June 7, 2609	2609	85 19 0	13	8 3 10	12	7 2 62 18 0

Compared with the last sale, the decline has been in the standard 7s. 6d., and in the price per ton of ore about 1s. There will be no sale on June 28.

At the Foxdale (Isle of Man) Mining Company meeting, on June 4, the directors declared their usual quarterly dividend, of 10s. per share.

At the Wheal Mary Ann meeting, on Tuesday (Mr. James Cook in the chair), the accounts for the three months ending March showed a credit balance of 2017. 6s. 5d. The profit on the three months' working was 519. 5s. 11d. A dividend of 512. (10s. per share) was declared, and 1499. 6s. 5d. carried to the credit of next account. Capt. Olyano, Harris, Stevens, and several reports upon the various points of operation. The slopes and pitches are producing much the same as for some time past.

At the Bronfloyd Mine extraordinary general meeting, on Tuesday, at the Guildhall Hotel, the special resolutions which were passed at a like meeting on May 23 (particulars of which have already appeared in the Journal) were confirmed by the vote of 63 to 1, 7351 shares being represented at the meeting. The mine was reported to be much improved in the ground about the 45, the slope both above and below yielding fully 4 tons of silver-lead ore per fm., the slope being quite 6 fathoms wide. It was further elicited, in reply to Mr. Lane, that the same run of ore ground is expected to be reached in the lowest level of the mine (the 56) in less than 2 fathoms driving. The Chairman announced that the quarterly dividend for July would be increased to 1000l.; this will be against 600l. paid at the corresponding period of last year, which latter sum was 300l. in excess of the dividend of July, 1868.

At the Wheal Bassett meeting, on Tuesday, the accounts for March and April showed a credit balance of 2917. 19s. 1d. The profit on the two months' working was 1929. 12s. 11d. Captains Martyn, Trevena, Pascoe, and Richards reported upon the various points of operation. They have adopted a new baffle on the slime-floors, instead of the ordinary one, which they could not work at all times, through an insufficiency of water. They feel confident the new baffle will pay for the outlay in a very short time.

At the New Gwynfynydd Gold Mining Company extraordinary general meeting, held at No. 71, Lord-street, Liverpool, on June 4 (Mr. W. H. Collett in the chair), the proposition for raising additional capital was carried by a large majority. The new shares (5500 of 1l. each) will be offered to the present members at par, in the proportion of one to two original shares, but the public will be allowed to apply for a larger number. The public also who members will have the preference over later applications. We understand that the managing director is preparing a progress report, which is only delayed until the new percussion-tables have proved their efficacy in saving the lead whilst the gold is being extracted by the electro medium, and some other experiments respecting the precise kind of machinery to be erected with the fresh capital. This will also be partly employed in laying down tramways and inclined planes, and in building suitable and permanent offices for the captain and over men on the spot. In the Chidlaw lode shaft the gold still continues to hold on steadily, now 4 fathoms deep, and every blast throws out large quantities thoroughly impregnated with the precious metal. The London offices of this company are at 4, New Broad-street, where every information can be obtained from the secretary, and orders given for visiting the mines, either by personal application or by letter.

At the Budnick Consols meeting, yesterday (Mr. J. Clue in the chair), the accounts showed a credit balance of 2527. 17s. 11d. A call of 6s. per share was made. Mr. Edward Brewis was appointed secretary of the company, in place of Mr. T. Rodwell, and it was resolved to hold a special meeting in a fortnight, to forfeit shares then in arrear of call, and to consider the best method of raising sufficient capital to erect a pumping-engine on the mine eastward, all practical miners agreeing that this can be done with great advantage.

At the Queen Silver and Copper Mining Company meeting, on June 1 (Mr. W. H. B. Kempe in the chair), the appointments of the secretary, Mr. T. J. Barnard, and the solicitors, Messrs. Luxton and Son, were confirmed. Reference was made to Dr. Philpott's assay of specimens, giving 25 per cent. of silver, and Capt. Knott stated that he had himself broken small stones yielding 75 per cent. of silver, or 25 per cent. pure silver. He showed some specimens of rich silver ore from the mine, which he would guarantee to produce more than 10,000 ozs. Mr. Dobie's report will be found elsewhere.

At the Emouth Silver-lead Mine meeting, on Monday (Mr. George H. Bowyer in the chair), the accounts showed a credit balance of 691. 13s. 1d. Capt. Cook stated that "there were now at Newton and on the mine, ready for market, about 23 tons of lead and 100 tons of blende. The machinery is working satisfactorily, and I consider the mine is looking very well." The following gentlemen were re-elected to the committee of management:—Messrs. George H. Bowyer, T. E. May, and G. J. Vizard.

At the Cefn Consols Lead Mine meeting, yesterday (Dr. Collis Brown in the chair), a satisfactory report was read as to the position and prospects of the mine. Details in another column.

At the Vieille Montagne Company meeting, on April 30, the accounts for the twelve months ending December, 1869, showed a net profit of 124,846l., which was appropriated thus:—To reserve fund, 21,169l.; dividend to shareholders (10s. per share), 90,000l.; management, 13,556l.; and carried forward to next account, 121l. The position of the undertaking was considered to be highly satisfactory.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUES DEPARTMENT an increase in the "notes issued" of 157,640l., which is represented by a corresponding increase in the "coin and bullion" on the other side of the account. In the BANKING DEPARTMENT there was shown a decrease in the "other deposits" of 242,979l.; in the "seven day and other bills" of 19,131l.; and in the "rest" of 2097l.; together, 264,207l.; and an increase in the "public deposits" of 649,785l.—385,578l. On the asset side of the account there was an increase in the "Government securities" of 42,574l.; and in the "other securities" of 34,817l.—77,391l.; leaving an increase in the total reserve of 308,187l.

A petition for winding-up the Vallongo Slate and Slab Quarry Company (Limited) is to be heard before Vice-Chancellor Malins, on June 24.

THE PROPOSED GREAT WESTERN MARITIME SHIP CANAL.

THE ABOVE ENTERPRISE, having been before the public for some time, has been WELL RECEIVED in SOUTH WALES and the WEST OF ENGLAND, and favourably commented upon by the London and Provincial press.

The promoters require COPIES OF PAPERS from the 22d October, 1869, containing Reports of Meetings, Leading Articles, Notices, &c., having reference to the scheme.

Address to "The Promoters, Great Western Maritime Canal," care of Mr. G. Street, 30, Cornhill, London, E.C.

NATIONAL PROVINCIAL BANK OF ENGLAND.

The Directors of the National Provincial Bank of England hereby give notice that a HALF-YEARLY DIVIDEND at the rate of EIGHT PER CENT. PER ANNUM, and a HALF-YEARLY BONUS OF SEVEN PER CENT., will be PAYABLE on the company's stock on and after the 11th day of June next, when the dividend and bonus warrants may be obtained at the company's office, No. 112, Bishopsgate-street (corner of Threadneedle-street), or at the different branches.

The Transfer Books will be closed on and after Saturday, the 11th day of June, until the dividend and bonus become payable.

By order of the Court of Directors,
E. ATKINSON, Joint General Manager.
H. WOLT, Managers.

IMPERIAL OTTOMAN MINING COMPANY (LIMITED).

Notice is hereby given that, in compliance with the requirements of the Articles of Association, a GENERAL MEETING of the company will be HELD at the offices, 46, Moorgate-street, on THURSDAY, the 23d day of June instant, at Twelve o'clock.

The Transfer Books will be closed from the 13th to the 24th instant.
By order of the Board, C. W. CARPENTER, Secretary.

TAVARONE MINING COMPANY, ITALY.—FOR SALE.

Twenty Shares in this highly-recommended Mine, at 5s. discount. Address, "Y. D.," Mining Journal Office, 26, Fleet-street, London, E.C.

TO CAPITALISTS, AND OTHERS.

COAL AND IRONSTONE.—A valuable FREEHOLD and current-going COLLIERY and IRONSTONE WORKS in NORTH STAFFORDSHIRE TO BE LET on royalty, with option of purchase, or an active practical MANAGER, with adequate capital for the erection of blast-furnaces, would be treated with, on advantageous terms of PARTNERSHIP. The machinery, plant, and railway to be taken at a valuation, or a rental paid. Further information and particulars may be obtained on application to Messrs. SAUNDERS and LEWIS, Estate Agents, Surveyors, Valuers, &c., Full-street, Derby, and Waterloo-chambers, Temple-row West, Birmingham.

GEAR'S MINE, ST. HILARY.

THE PROPRIETORS of the above MINE, being also the landowners, and having made a DISCOVERY OF TIN, which is only worked to the depth of a few fathoms below surface, where there is now a good lode in the bottom and ends, are open to TREAT with a MINING COMPANY TO WORK the same, which will be granted at 1-18th royalty. More than 4100 worth of tin has been sold for, which by mining within a very short time, and it also shows good indications for the production of copper.

Every facility will be shown to mining agents, or others, for the inspection of the mine, by applying to the proprietors, Gear's Mine, Goldsmithy, Marazion, Cornwall.—Dated June 7, 1870.

Contracts for Mine Materials.
For WEST CHIVERTON, and other Mines, near TRURO, CORNWALL.
TENDERS are invited for the SUPPLY OF MATERIALS as under, for twelve months—viz., from the 1st day of July next to the 30th of June, 1871:—
About SIX THOUSAND TONS OF COAL.
CANDLES, TALLOW, ANTI-FRICTION GREASE, RAPE and OLIVE OIL, IRON, STEEL, CRUSHER ROLLS, LEATHER, WHITE, RED, and SHEET LEAD, RAILS of every description, &c.
For particulars, apply to the Manager, Capt. JULEFF, Garra's Wharf, Truro; or to Mr. RICHARD CLOGG, Purser, Liskeard, to whom Tenders should be addressed "Tender for Garra's Wharf, Truro," on or before the 24th instant, and not later than One o'clock P.M.
Dated Liskeard, June 8, 1870.

Borough of St. Helen's Water Works.

TO IRON FOUNDERS.
THE CORPORATION OF ST. HELEN'S are PREPARED to RECEIVE TENDERS for the SUPPLY of about THREE THOUSAND EIGHT HUNDRED AND FORTY YARDS of 15 inch CAST-IRON PIPES.

For specification and form of tender apply to Mr. THOS. S. STOKKE, C.E., Whiston Pumping Station, near Prescot, on and after the 3rd of June next.

Sealed tenders, endorsed "Tender for Water Pipes," to be sent in, addressed to the Town Clerk's Office, St. Helen's, not later than Tuesday, the 14th day of June, 1870.

The Corporation do not pledge themselves to accept the lowest or any other tender.
By order,
HAROLD PILKINGTON, Town Clerk.
Hardshaw-street, St. Helen's, 25th May, 1870.

MINING ENGINEER WANTED, with capital and first-class references, to reside abroad, and act as PARTNER and AGENT for a party in London. Capital required, from £2000 to £5000.
Address, "H. R.," care of housekeeper, 1, Gresham-buildings, E.C.

BRITISH SPELTER AGENCY WANTED.
AN OLD and RESPECTABLE FIRM in the METAL TRADE would be happy to treat with some WORKS for the SALE of their SPELTER in one of the PRINCIPAL TOWNS in the MIDLAND COUNTIES, where the consumption of spelter is very large.
Apply to "P. and C.," Mining Journal Office, 26, Fleet-street, London, E.C.

A GENTLEMAN of extensive experience in Mines and Mining in Spain and Italy, and speaking Spanish fluently, is OPEN to an ENGAGEMENT either to EXAMINE and REPORT upon MINES in THOSE COUNTRIES, or to SUPERINTEND the WORKING of QUICKSILVER, COPPER, LEAD, or SILVER MINES, and can advise intending purchasers or shareholders as to the best localities for profitable investment. Highest references given.
Address, "T. T.," Lombard Exchange, Lombard-street, London, E.C.

COLLIERIES.

A Gentleman of many years' experience in the COAL TRADE, and who is thoroughly acquainted with the SOUTH-WESTERN RAILWAY DISTRICT, is open to an AGENCY.
Communications to be addressed Messrs. FAWCETT, HORNE, and HUNTER, 6, Lincoln's Inn-fields.

PARTNERSHIP—COAL TRADE.

A COLLIERY OWNER, having an opportunity of extending the workable area of Coal Land, DESIRES ADDITIONAL CAPITAL TO CARRY OUT HIS VIEWS.
Apply to JOSEPH SIMPSON, Public Accountant, 17, Pavement, Finsbury, London, E.C.

TO INVESTORS.

PREFERENCE SHARES in a very desirable COLLIERY, situate in the heart of the COAL DISTRICTS of SOUTH WALES, to yield a SEVEN PER CENT. PREFERENCE DIVIDEND, with a further estimated DIVIDEND of from SEVEN to FOURTEEN PER CENT.

Full particulars may be obtained of Messrs. SHARF and ROBINSON, C.E., No. 7, Westminster-chambers, Westminster; or of Messrs. FEARON, CLABON, and FEARON, Solicitors, 21, Great George-street, Westminster.

WATSALL COLLIERY, CLEE HILL, NEAR LUDLOW.

TO BE LET, BY PRIVATE CONTRACT.
For particulars and to treat, apply to Messrs. URWICK and MARSTON, solicitors, Ludlow.

TO CAPITALISTS.

WANTED, a PARTNER, with £1700, to DEVELOPE a COLLIERY on the CELEBRATED LLANTWIT SEAMS OF COAL.
For full particulars, apply to Mr. THOMAS DAVIES, Mining Engineer, Pontypridd, Glamorganshire.

WANTED, a PARTNER, in a small established SPELTER WORKS, situate in a most advantageous and economical position. A person with energy and a small capital required.
Apply, in first instance, to "D.," Post Office, Swansea.

WANTED, by an old-established firm of Metal Brokers in Liverpool, an AGENCY to REPRESENT in that town a first-class STAFFORDSHIRE or MIDDLEBOROUGH IRONMASTER. Unexceptionable references can be given.
Address, "Metal," care of Lee and Nightingale, Liverpool.

SOUTH AMERICA.

AN INTEREST in a VALUABLE and EXTENSIVE MINING PROPERTY FOR SALE, to which a railway is now being completed.
For particulars, address "G. and E.," care of Mr. B. Fothergill, C.E., 15, George-street, Mansion House, London.

A RICH QUICKSILVER MINE in HUNGARY FOR SALE.

or TO BE WORKED ON ROYALTY.
For particulars, apply to H. BERMAN, Königsgasse, 9, Pest, Hungary.

MINING SETTS IN DEVON.

TIN, COPPER, AND LEAD, in the Manor of SHEEPSTOR, and LANDS in TAVISTOCK, WHITCHURCH, PETER TAVY, LAMERTON, and LIDFORD. Water power. Terms, 21 years, renewable. Dues, 1-30th for Tin, 1-20th for Copper and Lead, reduced to 1-60th after a moderate outlay, until mines pay cost.
Apply to Mr. CATER, Solicitor, Plymouth.—Feb. 19, 1870.

CARNARVONSHIRE.

THE ADVERTISER has an EXTENSIVE MINING SETT, through which are running several valuable lodes of LEAD and COPPER, also a considerable deposit of MANGANESE. It abuts upon the richest mines in North Wales, and merely requires a small capital to develop it. The dues are very low, and the situation most favourable for working. He is not a mining speculator, and would be glad to SHARE the GRANT with a CAPITALIST, or TO DISPOSE of his INTEREST in it, having full power to do either from his landlord.

For particulars apply, by letter, to "M. B.," Post Office, Penryn, near Carnarvon.

TO INVESTORS.

TO BE DISPOSED OF, a FEW SHARES in a FIRST-CLASS DIVIDEND-PAYING UNDERTAKING. Will be sold to pay not less than 17 per cent. per annum.
Address, "N. F. T.," Mining Journal Office, 26, Fleet-street, London, E.C.

FOR SALE BY PUBLIC AUCTION, AT HAYLE.

THE ENGINE WORKS, FOUNDRIES, YARDS, SHIP BUILDING YARD, GAS WORKS, STABLING, BUILDINGS, HOUSES, and other property of Messrs. Sandy, Vivian, and Co., WILL BE SOLD, BY PUBLIC AUCTION, in the course of a few weeks, unless previously disposed of by private contract, either as a whole, or in lots, to suit the convenience of purchasers.

Full particulars may be had on application, personally or by letter, at the Copperhouse Foundry Office, Hayle.—June, 1870.

WELSH LEAD MINE.

FOR SALE, the LEASE of a VALUABLE LEAD MINE, close to the celebrated Van and Van Consols Mines, for £2000. A good lode has been discovered.
Every information can be obtained on application to Mr. MATTHEW GREENE, Pinner's Hall, Old Broad-street, London, E.C.

CARDIGANSHIRE—DESIRABLE MINING SETT FOR SALE.

TO BE SOLD, an extensive SETT, through which several valuable lodes, producing SILVER-LEAD ORE, pass. Price £3200.
For a view, apply to Capt. LISTER, at Ponterwydd, near Aberystwith, who will show plans and sections.

BRICK-MAKING MACHINERY FOR SALE.

FOR SALE, a BRICK-MAKING &c., which has only been a short time in use, consisting of patent DRY CLAY MILL, by Bradley and Craven; pan 2 ft. diameter, with extra heavy rollers for crushing strong shale; elevators, pug mill, or mixing pan; tables, barrows, &c.
Also a number of 3/4 yard WAGONS, 2 ft. 9 in. gauge.
Apply to THOMAS NELSON, Marsden, near Huddersfield.

FOR SALE, TWO CORNISH BOILERS, of 12 tons each, with FITTINGS, complete, equal to new.

Apply to Mr. CHARLES BAWDEN, Poldice House, St. Day, Scornier, Cornwall.

TO BE LET, BY PRIVATE CONTRACT, EYNANT SLATE QUARRY, situate in the parish of LLANWYDDON, MONTGOMERYSHIRE.

The vein is about 30 yards wide, weighs on both sides with hard rock; the slate of good quality, and the sett contains about 1800 acres.
For further particulars, apply to Mr. EDWARD DAVIES, Mawddwy Cottages, Dinas Mawddwy.

CHATWOOD, STURGEON, AND CO.,
ENGINEERS, &c.,
BOLTON,
Sole Manufacturers of the Patent Self-acting
ORE CRUSHING AND PULVERISING MACHINERY,
Patent Coal-getting Plant,
Patent Air Compressing Engines,
Patent Blowers and Exhausters, &c., &c.,
"Dead Blow" Steam Hammer.
Testimonials and Prices sent free on application.
GLASGOW OFFICE: 127 and 129, TRONGATE—P. and W.
MACCLELLAN, Agents.
LONDON OFFICE: 33, CORNHILL, E.C.—DONALD ATKEY and Co., Agents.

NOTICE.—Messrs. H. BAILEY, SON, and Co., late licensees of the PATENT "DEAD BLOW" STEAM HAMMER, having retired from their business of Engineers, have transferred their Steam Hammer Business and Plant to C. S. and Co., to whom in future all communications respecting Steam Hammers should be addressed.

DEEP LIFT PUMPS.

HAYWARD TYLER and CO. are prepared to ESTIMATE for their PATENT "UNIVERSAL" STEAM PUMPS, Vertical and horizontal, with either long or short strokes. These machines have no fly-wheel, tappit, or small valves, are exceedingly simple, and are applicable to lifts of any height.

SOLE MAKERS,
84 and 85, UPPER WHITECROSS STREET, LONDON, E.C.

STEAM ENGINE FOR SALE.—A 36 in. cylinder ENGINE, 8 ft. stroke, equal beam, ONE 10 ton BOILER, and fly wheel 12 tons.

The whole to be sold in One Lot. A great bargain.
For further particulars, apply to Mr. JAMES HICKET, 22, Austinfriars, E.C.

TO BE LET, a VALUABLE COAL FIELD, in NOTTINGHAMSHIRE, containing between TWO THOUSAND and THREE THOUSAND ACRES of the TOP HARD SEAM OF COAL.

Apply to Mr. T. W. JEFFCOCK, 18, Bank-street, Sheffield.

TO BE LET, ON LEASE, for a term of years, SEVERAL ACRES of LAND, suitable for MANUFACTURING PURPOSES, advantageously situated on the south bank of the River Tyne, about two miles below Newcastle-on-Tyne, and within a quarter of a mile from the North-Eastern Railway. There is a good quay frontage, with deep water.

Apply to Mr. T. S. BRAMWELL, King-street, Quay side, Newcastle-on-Tyne.

NOTICE.

Each unstamped copy of the Journal of this day, transmitted by Post, must have an extra stamp affixed. This is requisite, in consequence of the Double Supplement carrying the weight of the paper beyond the Post Office allowance. For the convenience of those subscribers who have stamped copies, we have had a higher-priced stamp impressed, to allow of their papers passing through the Post without extra cost.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
June 3	Minera	100	12 0 0	A. Eytton.
	ditto	93	11 18 0	ditto
	ditto	33	12 0 0	Faither Lead Co.
	ditto	100	12 6 0	A. Eytton.
	ditto	54	12 6 0	ditto
	ditto	31 1/2	12 0 0	ditto
	ditto	31 1/2	12 0 0	Panther Lead Co.
	Great Laxey	100	22 1 0	Stims, Williams, & Co.
6	Glogfawr	40	13 0 0	Weston & Collingborn
	Frongoch	120	11 6 0	Stims, Williams, & Co.
	Graigoch	30	11 6 0	ditto
	East Darren	80	16 0 0	Panther Lead Co.
	Goginan	31	16 2 0	ditto
	Cwm Erfin	35	15 19 0	ditto
	Bwadrain Consols	30	11 5 6	Weston & Collingborn
9	Talargoch	26 1/2	12 3 6	Walker, Parker, & Co.
	ditto	145	13 5 0	ditto
	Trelogan	40	12 6 0	ditto
	Holywell Level	27 1/2	11 5 0	ditto
	ditto	27 1/2	11 5 0	A. Eytton.
	Glan Alun	20	11 9 0	Walker, Parker, & Co.
	Gladstone	7 1/2	11 11 0	A. Eytton.
	ditto	7 1/2	11 11 0	A. Eytton.
	Wagstaff	10	10 0 0	Walker, Parker, & Co.
	Saxon	18	10 15 0	ditto
	North Houblas	4 1/2	9 10 0	ditto
	ditto	2	4 5 0	ditto

BLLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
June 7	Cwmbyr	30	3 0 6	Dillwyn & Co.

BLACK TIN.

Date.	Mine.	Ts. c. q. lbs.	Price p. ton.	Amount.	Purchasers.
June 1	Wheal Ury	10 10 2 10	£79 5 10	£844 18 0	Truro Co.
	ditto	10 10 3 24	79 5 10	836 7 7	Bischoe.
4	Pedn-an-drea	9 2 2 16	—	743 10 2	Truro Co.
8	North Crofty	13 8 10 10	80 12 6	1080 14 6	—
	Penballa	8 1 0 14	82 10 0	654 12 9	Daubaz.

WEST JEWELL sold, on the 2d inst., 47 tons of tinstuff, which realised 316l. 5s.; worth, on an average, 67. 14s. 8d. per ton.

ARSENIC.

Date.	Mine.	Ts. c. q. lbs.	Price p. ton.	Amount.	Purchasers.
June 4	Pedn-an-drea	24 0 0 0	£2 15 10	—	R. Mitchell.

COPPER ORES.

Sampled May 18, and sold at Swansea, June 7.

Knockmahon117	73	4	13	0	Copper ore. 14	173	11	0		
ditto128	73	4	14	6						
TOTAL PRODUCE.										
Moonta Silmest	667	£5	189	5	0	Copper Sludge	3	£38	3	
Parmatama	411	1	5799	12	0	Ashes	156	69	291	18
Berchaven	378	1	595	16	6	Currawang Reg.	69	69	879	16
Knockmahon	352	352	1690	1	6	Copper Ore	4	37	2	0
Wallaroo Ore	352	352	1690	1	6	Spanish Ore	6	64	1	0
Cape Ore	102	102	187	17	0	Copper Precipitate	0	72	6	0
Yanganooka	75	75	1081	17	0	Copper Ore	14	154	0	0
Copper Sludge	62	62	167	8	0					

Notices to Correspondents.

•• Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

NORTH CARADON.—We have had numerous enquiries during the week respecting this mine and the parties connected with it. Applications for information should be made to Mr. Neville, the secretary of the company, 17, Ashley-terrace, North-road, Plymouth, or to those through whom shares may have been purchased: those having cause of complaint will thus be brought into communication with parties who may assist them. The reports referred to possess no interest to our readers, as they relate to alleged fraudulent share-dealing transactions, and not to matters of value to those concerned in practical and legitimate mining. No prospectus of the company has been published in the Journal.

COST-BOOK AND LIMITED LIABILITY.—"Ignotus" (Cork).—The difference between the two styles of partnership cannot be briefly explained; but it will, perhaps, suffice to state that the main distinction, if the mine to be worked be in Cornwall and Devon (for so-called cost-book companies elsewhere are merely private partnerships) is that in a limited company the amount of the share is fixed, whilst in a cost-book company it is variable. In the former the shareholders are not liable if the officers incur debts beyond the amount of nominal capital.

PRICES OF MINING SHARES.—"A. B." (Scarborough).—The prices advertised are those at which certain parcels of shares can be disposed of by the persons advertising. The holder of ten or twenty shares in a mine, desirous to realise at once, may be compelled, and would be quite willing, to sell below the quoted price, but isolated transactions of this character could not be taken to affect the ordinary market quotation.

BROKERS' TECHNICALITIES.—"A Reader" (Midland Counties) will, doubtless, find all the information he requires in "Fenn, On the Funds," published by Mr. Kilmington Wilson, Royal Exchange.

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, JUNE 11, 1870.

UNIONIST TERRORISM AGAIN.

How much longer are our independent colliers to remain at the mercy of men who seem evermore to be permeated by a leaven of bitterness, whose perfect work is "cowardly assassination and sordid tyranny?" At the mercy of such people the non-Unionist colliers, nevertheless, are. They get but scant protection from the authorities. These latter appear to have ceded their power of being "a terror to evil-doers, and a praise to those who do well." What other interpretation can be put upon the judgment delivered the other day in the Sheffield Town Hall, when Messrs. NEWTON and CHAMBERS had one of their men up for declining to carry out an agreement to go to work, and before he left again give 28 days' notice? Tired of remaining any longer in idle antagonism with his employers, the collier (BENJAMIN COOPER) determined to resume work, and thereby separate himself from the Union. His decision had become known to his former party, and on the night (Sunday) before he was to begin they surrounded his house, threatened to smash his windows, and do him personal injury if he carried out his resolve. His employers had offered him escort to and fro; or an abode with other workmen close to the pit. The poor fellow had, however, been effectively frightened, and all the reply which could be got from him, either by his employers or before the magistrates, was: "I say I dare not go to work." A magistrate mildly suggested that the escort might be sufficient protection, but the man replied by an intimation that he feared his house would be attacked during the night. "You may be needlessly alarmed," it was responded; and he was advised, "You had better go to work at once." The report immediately adds, as the declaration of one of the sitting magistrates, "The summons will be dismissed." Previously, the same magistrate had said, "I don't see that he is to blame. I don't see that we can punish him under the circumstances. The man has done nothing wrong, and he cannot endanger his life. Can you prevent his being threatened?"

Of course Messrs. NEWTON and CHAMBERS could not prevent his being threatened. Who ought to possess the most power in that direction? Clearly the authorities. It may be impossible for them to restrain one man from threatening another, but they may make threatening so risky a business as that it will be unsafe to indulge in it. At present, however, all that disaffected colliers have to do in order to keep others from resuming work is to pretty roundly threaten the men who wish to begin again; and if they can only preserve their incognito, or by sufficient terrorism prevent the threatened from giving evidence against them, then they may laugh at "the majesty of the law." There was once an occasion when certain night watchmen were thus instructed as to their duties in the streets of Messina—"You are to call at all the ale-houses, and bid them that are drunk get them to bed. How if they will not? Why, then let them alone till they are sober. If they make you not the better answer you may say they are not the men you took them for." COOPER was advised to go to work, but inasmuch as he declined, fearing violence, which no man in this kingdom ought to have cause to fear, why then he must not be compelled to abide by the terms of his agreement. Mr. CHAS. READE, describing how Mr. LENO (of the *Sheffield Telegraph*) had to go on writing his leaders with a loaded revolver on his desk, because he had proclaimed what proved to be true, that the Unions had been guilty of every trade outrage that had taken place for years in the district of which we are now writing, intimates that the reader may imagine he is speaking of California. "Oh, dear no, the very centre of England," is Mr. READE's reply. What was true apparently before the Royal Commission sat is not less true now. The authorities do not render citizens the protection they have a right to demand, and for which they pretty dearly pay.

We do not for a moment conceive that the magistrates of Sheffield are doing other than what, as honorable men in every sense of the word, they believe it to be their duty to do. Mercy should ever temper justice, but there is such a thing as an unmerciful leniency. In such cases as these the assaulted and those who assault are alike most protected by vigour of action which shall leave no room for doubt as to the hands which hold the reins of power. Thereby larger offences are not likely to grow out of smaller, and contemplated crimes are checked in their very conception. It cannot be asserted, nor do we attempt to assert, that because of what took place in the Sheffield Town Hall a few days before, other non-Unionists in the employ of Messrs. NEWTON and CHAMBERS were openly beaten last Saturday morning when they were on their way from Westwood-row to Sheffield; but they were beaten, some five of them, and beaten, there is little doubt, because they were what their assailants termed them in the fray "black sheep." Some 14 fellows met the five non-Unionist colliers just as they got near the White Horse public house at Chapelton, and, having addressed them as we have intimated, followed them up the road and threw stones at them. The reporter, going on to describe what followed, says:—

"A chimney sweeper's apparatus was close at hand, and its several joints were freely distributed amongst the assailants, who freely used the weapons upon the unfortunate non-Unionists. One man, WILLIAM SMITH, was severely handled; he was beaten, knocked down, and while on the ground his bundle of wearing apparel was stolen. JOSEPH JARVIS met with similar violence."

The non-Unionists would seem to have escaped as speedily as they could, and, certain of them giving information to the police, some of the assailants were arrested. The attacked were going quietly on their way, making for the railway station to spend the Whitstable holidays in Leicester.

Last week it was shown in the *Mining Journal* how certain of the colliers at the Monkwood Colliery, in Derbyshire, proceeded, from first abusing and then threatening, to the manifestation of violent intentions upon the works, and were only stayed by the calling in of the police. Every act of magisterial leniency, wherever the freedom of either operatives or employers is interfered with, by coercion, implied or real, is, we repeat, a grave mistake. Why the very women turn Amazons in suppression of the freedom of labour. It has been made known that the other day some 200 mine wives, at Addiwell and

Moss End, turned out, and, marching in a body, compelled three pits men to stop work; and were induced to disperse only on the promise of Mr. SCOTT, the manager, when they were about to drive away the fourth Moss End company of colliers, that he would settle with the men. As to these women, it was to the credit, more than otherwise, of the men that they should have retreated before the shower of stones with which the novel attacking party greeted them. The incident is further illustrative of our position, that neither capital nor labour at our collieries is sufficiently respected by the authorities. We quite concur with Mr. READE, when he says—"The Executive is fast asleep in the matter, or it would long ago have planted the Manchester district with 100,000 special constables; and the globe of legislation now prescribed to Parliament, though excellent in some respects, is null in others; it would, if it passed into law, rather encourage the intimidation of one man by twenty, and make him starve his family to save his skin—cruel alternative—and would not seriously check the darker and more bloody outrages, nor prevent their spreading from their present populous centres all over the land." Not only should the executive exercise greater determination, but the Government likewise must shake off its lethargy, and adopt stringent measures to defend the liberty of the subject against this "cowardly assassination and sordid tyranny." We call upon the mining interest in Parliament to see to the latter, and we beg all our magistracy not to be unwisely soft-hearted when such cases come before them. Unless something more worthy of our reputation as a law-abiding and order-loving people is done, the next few months of revived trade will witness painful disorganisation at our collieries and iron works.

WALES AND ITS RAILWAYS.

In last week's *Journal* we drew attention to a question of very considerable moment—the further development of the South Wales coal basin by means of greater facilities being granted by the Great Western Railway Company for the conveyance and shipment of minerals. We then said, and we now repeat, that in all probability the whole trade of the South Wales district, but more especially the iron and coal trades, will shortly receive a healthy stimulus—that the demand for iron for the European and foreign markets will be much greater than it has been for several years past, and that there will be larger outputs from the various collieries than has hitherto existed. In alluding to the Great Western Railway Company as the company to whom the manufacturers, colliery proprietors, and freighters naturally look for greater facilities, in order to take advantage of any increased trade, it should not be forgotten that that company was the pioneer of railway enterprise into the Principality, and to that company are the trades, therefore, indebted for many of the commercial advantages which they possess. We do not, therefore, write in any hostile spirit to the Great Western; our object is to show that whilst the trade of the district is languishing and yearning for better railway facilities, that the Great Western would by granting those facilities, and encouraging trade, ultimately find that they possess in the mineral basin of South Wales a traffic which would go a considerable way to pay larger dividends, and to retrieve its position amongst the successful commercial undertakings of the country.

The question naturally suggests itself—is the carriage of minerals profitable? This, of course, depends upon circumstances. It is not, however, our purpose now to go into the question of the carriage of minerals generally, but we think the opinion will be endorsed by all practical men when we state that where (as in the case of the Great Western line) there is an almost inexhaustible supply of that quality of coal which is greatly in demand, and also ports and docks within short and easy access, where any quantity could be exported, that the carriage of minerals, properly conducted, must pay. And not only so. If it be true, as some engineers assert, that the dead weight in passenger trains amounts to no less than 95 per cent., whilst the dead weight of a goods train is but 70 per cent., then the carriage of minerals and goods will pay infinitely better than the carriage of passengers. We are not saying that we pin our faith to these statistics of the engineers (for it is well known that the dead weight with regard to goods carried on ordinary roads is only some 23 or 30 per cent.), but we think it will be generally admitted that under favourable circumstances the carriage of minerals can be more profitably conducted than of passengers. Why, then, then, in Wales the mineral traffic is allowed pretty much to take care of itself? Why is it not fostered and encouraged by the railway? And how is it that out of about 10,000,000 tons of coals annually raised in South Wales only about 4,000,000 tons are exported?

We believe that there are three main reasons why the South Wales coal trade has not yet been legitimately developed, and why consequently the Great Western Company has not received that accession to its dividends therefrom as the shareholders have a right to expect and demand. The first great impediment to the profitable carriage of minerals from the South Wales basin is the want of the narrow gauge throughout the main arteries. The second, the high, and in some instances prohibitory, rates charged; and the third, is the want of better shipping facilities in the various local ports. With regard to the first of these essentials—the narrow gauge—we need only remark that it has been the universal cry of the traders of the whole of South Wales for the past twenty years! Practical experience has proved beyond the possibility of doubt that the broad gauge is not suited to the carriage of minerals through such a mountainous country as Wales. Some few years ago almost every iron-maker, colliery proprietor, and manufacturer of any note in the South Wales district memorialised the directors in favour of the narrow gauge. The arguments adduced were allowed to be unanswerable. The desired boon was promised, but from that day to the present no further practical steps have been taken in the matter, and the trade still asks, but asks in vain, for the promised relief.

The second impediment to the legitimate development of the mineral trade of South Wales is the high rates charged for transport. We unhesitatingly state that in some instances the rates demanded are prohibitory—that is to say, a colliery proprietor cannot profitably export the produce of his pit on account of the tax imposed by the railways. A penny, and in some instances three half-pence, per ton per mile (exclusive of trucks) is the common charge for mineral traffic in Wales. This charge is so high that, except in very favourable localities, it is impossible to profitably work the coals, and vast areas now lie unopened, which with proper railway arrangements would be developed. It is generally admitted that the train cost per mile of a goods train is about 3s.; a mineral train usually consists of about 250 tons or 300 tons, and if a charge of only one farthing per ton per mile was made this would amount to about 6s. per mile. High charges simply mean, now-a-days, obstruction of trade and small profits; and if the Great Western Railway Company would keep this good old maxim in view, and practically give effect thereto, they would render an incalculable amount of good to the merchants and traders of the district, and most unquestionably augment their own returns.

The third impediment is the want of greater facilities at the various local ports of shipment. Unfortunately for the colliery proprietors and shippers, the Great Western Company have not only the management of the lines to the various ports, but also the shipping facilities in their keeping. One, probably, is only the natural sequence of the other, but the practical result is to injuriously affect the shipment of coal. The whole of the shipping ports of South Wales require more coal drops, more aiding accommodation and other shipping facilities. These, too, have been often admitted by the directors of the railway, but hitherto they have not been granted. A moderate outlay, judiciously expended at the principal ports, would give a great impetus to the coal trade, and could scarcely fail to prove remunerative to the railway company.

There can be no doubt that if these three main essentials were granted by the Great Western Railway Company the coal trade would soon treble if not quadruple itself. There is certainly no reason why it should not. There is an inexhaustible supply, and the demand for the better qualities of steam coal is increasing almost daily. The favourable position of South Wales ought to command the whole of the European market, with perhaps a few exceptions in the extreme North. Many ports in the British Channel require back freights, and the coal of South Wales to them would be a priceless boon. Why are the railway rates to those ports prohibitory? Why cannot South Wales coal be profitably delivered in London by means of its main

through line? These and other questions of serious import to the colliery proprietors and traders of South Wales on the one hand, and to the shareholders of the Great Western Company on the other hand, should engage the immediate and earnest attention of the directors—their own interests are involved in their practical solution. As railway facilities are granted, so will the trade of the Principality expand. Let, then, the directors read the signs of the times. We vain hope and believe the suicidal policy of former years is now abandoned—promptitude and energy are, however, required to give full effect to the increased trade springing up on all hands. The interest of the traders and those of the railway shareholders are identical—one cannot advance without the other. The traders naturally look to the railway for help. The company have now the trade in their own hands. If fostered and encouraged it will flourish and expand. If the railway company neglect the interests of the colliery proprietors and general traders of the district other alliances will be made, and rival lines heartily welcomed.

COAL IN THE FISCAL LEGISLATION OF THE UNITED STATES AND CANADA.

"The House of Representatives, by 113 to 79 votes, has instructed the Committee of Ways and Means to prepare a Bill repealing the duty on coal." Here we have a telegram dated "Washington, June 8." At its character no one who has read the information communicated in the *Journal* upon the current Tariff legislation in the United States will be surprised. Upon bituminous coal the duty at present levied there is \$1½ per ton, and upon anthracite it is 40 c. per ton. The protectionists, in their new Bill, were ready to allow anthracite to be admitted free, but they objected to any change upon bituminous. The House of Representatives, however, it is clear is not content with such an arrangement, and the immense majority by which they have expressed their dissatisfaction is tolerably indicative that alike bituminous and anthracite coal will soon be upon the list of American free imports. Hereat we cannot but express satisfaction.

In respect of coal, this legislation will be a decided contrast to the course which has just been determined upon by the Canadian Government. In Canada, ever since the abrogation of the Reciprocity Treaty with the United States, in 1866, there has been a pardonable feeling of grievance at the narrow and exclusive policy of the States. Leading products were admitted duty free into Canada, and on no articles had the duty been excessive, but the States Tariff had been nearly prohibitory. The Canadian Government, however, failing to secure the renewal of the Treaty by diplomacy, determined to apply force. They would show the States that the Canadas could likewise have "a policy of its own," under which it, too, might give "native interests" a moderate amount of protection. Amongst the taxes proposed there was to be a duty of 4 c. (2d.) per bushel on imported wheat, 25 c. (1s.) a barrel on flour, grain other than wheat 3 c. (1½d.) per bushel, rice 1 c. per pound, coal 50 c. per ton, and salt 5 c. per bushel, unless imported from Great Britain or her possessions. Then there was to be an additional 5 per cent. on the amount of all duties, new or old, to be thereafter collected. Sir GEORGE CARTIER then described a national policy—Ontario would have its salt and grain moderately protected in Quebec, the coarse grain barley and oats would be protected, and Nova Scotia would have its coal protected. New Brunswick would benefit generally, although a buyer of both coal and bread stuffs, by the enhanced prosperity of the whole dominion. Sir JOHN MACDONALD, the Premier, admitted, however, that what benefited one province might injure another; but they must sink all these questions in order to have a "national policy," for it was necessary they should let the American Government know that if the United States had a Tariff Canada also could adopt one, and govern their own country after their own fashion. The absurdity of the legislation was pitifully put by the President of the Quebec Board of Trade, who showed that that port took 130,000 tons of coal from Great Britain, and, estimating the relative prices at the pit's mouth of Scotch or American coal, the duty actually had a discriminating effect in favour of the latter, which the Tariff was intended to exclude. The Tariff was universally unpopular, and at an afternoon sitting the Government consented to abandon it. This they did step by step, the coal duty being the first to go. But at the evening sitting the Bill was re-introduced, some extraordinary influence having been brought to bear upon the Ministry in the brief interval of recess. After many nights of stormy debate the measure was passed through the Commons, and was eventually got through the Senate by 26 votes to 23. It is now law.

The coalowners in Nova Scotia were, no doubt, angry at the refusal of the United States to admit their coal free, whilst Pennsylvania was allowed to send its coal without duty into the Canadian, and chiefly the Ontario market. The supply of wood is gradually decreasing in the neighbourhood of all the great towns of Upper Canada, and coal is taking the place of wood. It is explained that the additional 2s. will tax the port of Toronto alone to the extent of from \$30,000 to \$40,000 annually, but that it will still be far cheaper to consume Pennsylvania coal even at the higher price created by the duty than bring the fuel from Nova Scotia. This province is a large importer of bread stuffs, and must pay the extra cost on those products in return for whatever advantage (?) her coal proprietors may gain by the tax on imported coal. "Curiously enough, too" (writes a correspondent, under date Toronto, May 19), those persons do not happen to be Canadians, or Nova Scotians, or Englishmen, but, with a few exceptions, are Americans—for whose sake to a great extent Canada is adopting her grand and exclusive national policy." No wonder that he should ask, "Can absurdity go much further?"

The Nova Scotians will soon, however, have an opportunity of sending their coal into the States free of duty. We do not think that the putting of 50 cents on United States coal sent into Canada has had any influence in bringing about the decision at which the 113 members of the House of Representatives have just come. We infer rather that the change is due to the growing determination of the manufacturing interests of the States to obtain their fuel at cheaper rates than are now possible. The colliery interest of Nova Scotia may well be congratulated upon their prospects.

THE USE OF GUNPOWDER IN MINES.

Whilst the proposition for superseding the use of gunpowder in mines by the substitution of mechanical appliances is attracting so much attention, the information given in his paper, read before the Manchester Geological Society, on the Use of Gunpowder in Mines, by Mr. G. C. GREENWELL, is of especial value. That the use of gunpowder affords the greatest facility for breaking down coal has long been admitted by all practical men, and it is probable that but for the very careless use of it the proposition to prohibit its use in mines would never have been heard of. There appears to be no valid objection to the use of gunpowder if ordinary judgment be exercised, and Mr. GREENWELL's paper pointed out the chief causes of accident, and the means of ensuring safety. He regards the use of gunpowder in mining as indispensable whenever it is necessary to make excavations in stone, and very advantageous when a hard seam of coal is being worked. He maintains that no more powder should be used than is absolutely necessary to separate the mass worked upon from the solid, so that it may come quietly away and settle down on the floor. In these observations he concurs with the opinion of all the more careful of the working miners, for it is well known that if moderate shots be used more round coal will be got from each blow than when the shots are too strong. But this is not all, the more moderate shot is attended with less danger, as it disturbs the ventilation less, and does not foul the end so much. The strength of the shot, again, should, he remarks, be regulated by the diameter of the hole rather than by its depth, and the reason of this is not difficult to understand, the powder is kept more compact, and, therefore, lighting more rapidly, does more useful work for a given weight of explosive. The relative merits of quick burning and slow burning powder does not appear to have been referred to in Mr. GREENWELL's paper, but this is probably because it is so generally acknowledged that just as there is a limit to the strength of the shot, so there is a limit to the quickness of the powder for efficient working, and this is no doubt the reason that the results obtained with the more quickly burning explosives have not been satisfactory. Even the more powerful kinds of gunpowder are too powerful for economically

blasting in mines, a good blasting powder being the most economic explosive for mining purposes which has yet been introduced.

It is not at all surprising that so eminently practical a man as Mr. GREENWELL should condemn the use of naked powder, for this has, doubtless, led to many accidents. In silicious rocks the objection is especially apparent, owing to the risk of sparks being given off by the flint. He advocated the use of paper cartridges and safety-fuses instead of loaded straws, and gave the preference to copper rather than iron pricklers, though he admitted that in Prussia, where iron was exclusively used, no accidents occurred that could be traced to their use; he attributed this immunity from accident to the universal employment of cartridges instead of naked powder. But the real cause of the continually increasing accidents in connection with blasting in mines is, probably, neither the use of naked powder nor that of iron tamping-rods and pricklers, but rather the use of gunpowder as a substitute, and not merely as an aid, for legitimate work in getting the coal. If the coal be undercut and holed on one side before it is blasted, the use of gunpowder is attended with no more danger in mining than in sporting; but when the coal is blasted on both sides, as is now daily becoming more common, the number of fast shots is increased, and consequently, the amount of danger. It is quite true that several of the inexplicable accidents which have recently occurred have taken place in headings wherein this mode of bringing down the coal has been practised, and it is equally true that the theory that has been started that the injuries which many of the men affected by them sustained had been caused by the ignition of inflammable coal dust, is scarcely satisfactory. The explanation given by Mr. GREENWELL seems much more admissible; he observes that this theory sets aside the fact that the ventilation is in an abnormal state immediately after the occurrence of the explosion of the fast or blown-out shot. The nice equilibrium always maintained in the ventilation of a pit—a strong current of air being always essential—is for the time being destroyed, a temporary vacuum was created, into which the gases contained in the coal, which had hitherto been restrained altogether, or only let off very slowly, in consequence of the pressure of the air, might rush through every crevice. This Mr. GREENWELL considered was sufficient to account for the serious nature of some recent accidents; and though he suggested the theory with some slight hesitation, he urged that the probability that it might be correct was sufficient to establish the necessity of using every precaution to prevent explosions of gunpowder, arising either from want of skill or want of care.

But whatever theory may be accepted upon this point, the fact remains the same, that at least some accidents do arise from the use of gunpowder, and if by the substitution of mechanical appliances these could be avoided the change would certainly be worth making. Mr. ANDREW KNOWLES attributed the accidents to unskillfulness of the workmen, and remarked that in his experience accidents very rarely happened to skilled workmen, but mostly to men who began mining later in life, and had not been well trained. Referring to Mr. GREENWELL's theory, Mr. DICKINSON enquired whether, if any weight was to be attached to it, it did not go to show that it was not safe to blast at all in fire-damp mines? Mr. GREENWELL thought not, but that it only showed that shots should not be fired unless properly placed. If the shots were regulated so as only to bring down the coal required, spent shots would be avoided. As to the truthfulness of Mr. GREENWELL's observations there can be no question. If every shot be fired by a competent man danger would be avoided; but Mr. DICKINSON's objection, that where 200 or 300 men are employed the discretion of every one of them cannot be guaranteed, appears conclusively to show that if wedging could be substituted for blasting it would be most desirable. From Mr. GREENWELL's observations, moreover, it would appear that when the working is carefully performed the wedge gives quite as much power as is wanted. If the coal be properly undercut and holed at the sides the power of the wedge will be ample to throw down the burden; and if the undercutting and holing be not properly done the use of gunpowder is so dangerous that there is no reason to delay the prohibition of its use. With regard to the best form of wedge, it is difficult to pronounce an opinion as to the best shape for the wedge pieces; indeed, whether that proposed by Mr. BIDDER or that by Mr. J. GRAFTON JONES should be used would seem to depend in a great measure upon the nature of the seam being worked; but the substitution of the screw pump for the ordinary hydraulic ram, as proposed by Mr. J. GRAFTON JONES, certainly seems to give his machine an advantage. The advisability of prohibiting the use of gunpowder may be doubtful, but Mr. GREENWELL's paper, and the observations upon it, cannot but induce the opinion that even when care is used by the workmen wedging the coal is no more laborious and much safer than blasting.

COLLIERS' WAGES IN AMERICA.—We have received from Mr. E. W. CLARK, President of the Lehigh Coal and Navigation Company, Pennsylvania, a full statement of the dispute between his company and their miners. The miners are already paid a high price for their work, yet are now standing idle, and are thus preventing a large number of persons from earning a livelihood, for it should be understood that it is with the miners alone that any dispute exists. The masters simply desire to pay the same (comparative) terms as are paid by competing companies, but the men demand the same price per foot cut, ignoring the fact that the Lehigh Company include many items which in the Beaver Mountain district are paid by the men. The demand of the men is obviously unjust, as the Lehigh Company have various expenses and disadvantages, for which the compensation is the size and easy working of the vein. This has always been allowed for, and there was a well-established difference in the rate paid for cutting coal between the two regions for many years. For the information of those not acquainted with the district, it is stated that "the miners rarely spend more than seven or eight hours a day in the mines, and probably do not work more than five or six hours. Estimating a day's work at six hours, very few of our miners earned less than \$1 for every hour they worked from July to December, 1869, inclusive." We seek to secure terms that will enable us to mine our coal as cheaply as other Lehigh operators, and the prices we offer will give to our miners as high wages as are earned anywhere else in the coal regions."

A PETROLEUM LOCOMOTIVE.—Travellers in France who have a horror of petroleum, and dread a repetition of the Abergele accident, may possibly not be aware that they may happen to find themselves not only in the same train with their dreaded enemy, but actually being drawn at the rate of 50 miles per hour by its means. M. Dieudonné recently exhibited the model of a small engine heated by means of petroleum. This locomotive carries 2000 litres of oil in the tender, a hand pump forcing the oil into a smaller reservoir near the boiler. The process of lighting the oil is said to be neither difficult nor dangerous, owing to the oil being kept in compartments, a small quantity only being lighted at one time, then another division, and so on till the whole furnace is alight. This engine consumes its own smoke perfectly; it is said to be extremely easy to drive, the driving apparatus being very simple. A larger locomotive, with some small improvements, has since been built, and has actually drawn ordinary trains on the railway between Epervy, Rheims, and Bar-le-Duc. It drew a train of 14 carriages with ease, and has already travelled over 2000 kilometres (about 1250 miles) without accident. The consumption of oil was 35 per cent. less by weight than that of good patent compressed coal; 1 kilogramme—a little more than 2 lbs.—of oil produced 12 kilogrammes (25 lbs.) of steam. The same system has been applied with success to the yacht Puebla.

THE MINERAL RESOURCES OF THE SOUTH-WEST OF IRELAND.—The views and statements of Mr. Hyde's paper, reviewed by us, continue to receive further demonstration. Recent advices state that a rich deposit of copper ore has been cut at Ballycummisk Mine, on the Big Ben lode, and at the 174 fm. level. Specimens of the rock may be seen at the London offices. The lode is here proved to be from 14 to 16 ft. wide, and extremely productive. From the surface downwards this lode has in places along its course or strike always exhibited unmistakable evidence and proofs of richness; and its general aspect, as regards matrix and contents, is so striking that it may be compared in all its conditions and character with the most typical of known Cornish veins, the well-defined walls of the lode consisting of pale-green steatitic fossiliferous (a marked feature in the associated productivity of the lode here as well as in Cornwall), and white quartz, associated with copper pyrites. These conditions are so marked as to clearly establish the presence of large deposits of ore; and the associated condi-

tions, which in all districts are looked upon, known, and believed to be true indications of continued richness, are here, again, equally congenial and well determined. We dwell upon this as evidence again bearing out our views relative to these conditions in depth hitherto not generally or sufficiently recognised in the South and South-West of Ireland, and certainly not properly understood or regarded some years since by certain geological observers, it being believed and asserted that no true lodes existed in depth. Mr. Hyde's paper, supported as it is by daily increasing testimony, should go far to remove this general but erroneous impression, by showing that here, as in Cornwall and other areas where similar conditions occur, there is ground for belief in the existence of good ores of copper in well-defined lodes, and at depths equal to that of other metalliferous areas, or districts, throughout Europe.

TRADE OF THE TYNE AND WEAR.

June 9.—The Coal and other trades here continue to prosper, all branches being well employed, and the prospect is better than it has been for years. The strike at Backworth, as stated last week, happily terminated after the stop of three weeks, and the district is now free from those disagreeable pests for the present. The Coke Trade, of course, continues to be most animated, the makers being taxed to the utmost, and it is scarcely possible to get the supply up to the demand. The iron furnaces and foundries are full of orders, and the general engine and iron manufacturers are also most of them extremely busy. As lately remarked in this letter, the works of Sir William Armstrong and Co., at Elswick, are shortly to be considerably extended, and an enormous new steam-hammer is to be erected. Large gas-furnaces are to be placed near the hammer, and cranes and every modern appliance, with many recent improvements, are to be introduced, so as to facilitate the forging of iron for guns of large calibre, shafts for engines, &c. A further rise has taken place in the price of pig-iron, and it is expected that rails and bars will shortly be advanced again in price, as the demand is extremely good, and is still increasing.

MECHANICAL VENTILATION.—As lately remarked in this letter, the ventilation of collieries by mechanical means in preference to furnace ventilation continues to make rapid progress. A large fan on the Guibal system has been lately constructed at Messrs. Black and Hawthorn's, Gateshead, and it has also been erected and got to work at the colliery of Lord Lonsdale, at Whitehaven; it is 36 ft. in diameter, and 12 ft. in width. It has so far given great satisfaction, the gross quantity of air put into circulation by it being 182,000 cubic feet per minute with 5 inches of water gauge, and nearly 21·6 indicated effective horse-power; and, what is very important, the power utilised amounted to 66·41 per cent. We append a detailed official account of these very remarkable and eminently satisfactory experiments:—

Experiments on Guibal's ventilator at Lord Lonsdale's Colliery, Whitehaven, on May 10: ventilator, 36 ft. diameter, by 12 ft. wide; engine, 30 in. diameter, and 30 in. stroke. Experiments conducted by Messrs. G. B. Forster, T. W. Bunning, Thomas Hawthorn, and S. Shepherd:—

Date of experiment.	No. of experiment.	Letters of experiment.	Average effective indicated pressure on piston.	Indicated effective horse-power of engine.	Quantity of air in mine, cubic ft. per minute.	Water-gauge at inlet of fan.	Power in the air at inlet of fan.	Proportion of effective powers utilised per cent.	Boiler strokes per minute.	Steam in boilers—lb. per sq. in.	Quantity of air per revolution of fan.
1870.			Lbs.	H.P.		In.	H.P.				
May 10.	1	A & B	8·841	40·716	94,786	1·6	28·900	58·70	43	45	2204*
"	2	C & D	16·136	88·136	128,540	2·8	56·713	61·34	51	45	2520*
"	3	E & F	28·000	216·913	182,000	5·0	143·594	66·41	72	50	2525*

* Richards' indicator.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—At the meeting of members, on Saturday, the intended meeting at Glasgow was mentioned, when it transpired that the days fixed were the same as for the annual meeting of the Mechanical Engineers at Birmingham, and as the members could not attend both meetings it was resolved that the secretary be requested to visit Glasgow, and endeavour to get the time of meeting altered, so as to permit members who wish to attend the meeting of Mechanical Engineers, as well as the meeting of Mining and Mechanical Engineers at Glasgow. A paper was then read by Mr. Alex. Ross, "On Boring against Water in Coal Mines." The paper was illustrated by diagrams showing the various modes of boring holes in advance of exploring drifts where old workings are supposed to exist, and no plans are extant showing the outlines of such workings. Some discussion took place on the paper, but, as is usual, it was postponed until the next meeting, when the paper will have been printed.

Mr. Green's paper, "On Weights and Measures now and formerly Used in the Coal Trade," was then read, and it also will be printed previous to next meeting.

REPORT FROM THE NORTH OF ENGLAND.

June 9.—The appearance of the works throughout the district indicates a holiday season. Trade is, of course, this week being temporarily interfered with, but as little time as possible will be lost, so that the heavy contracts on hand for manufactured materials may be proceeded with. The iron market at Middlesbrough, on Tuesday, was only thinly attended, in consequence of the holidays, but the demand for all kinds of iron was strong, and prices firm. The quotations were for No. 1, 55s., and No. 3, 53s., net cash, at makers' works. The Cleveland Ironmasters' Association return for May has just been issued, and the figures it gives indicate a state of trade that must be regarded as very encouraging. Notwithstanding the great make of pig-iron in the district, it is not sufficient to supply the present great demands. The manufacture of pig metal during last month was (taking members of the association and non-members together) 141,825 tons, an increase upon May, 1869, of 19,125 tons, and upon April, 1870, of 2107 tons; but whilst there is this increase shown, the stocks in makers' hands have gone down from 71,267 tons in April, to 68,014 tons at the end of May; and warrant stores have been reduced also during the month by 2050 tons. The number of blast-furnaces now blowing is 104, there being but very few not now in use that are available. Enquiry for rails and finished iron generally is reported to be good, and prices are stiffening. All manufacturers are well off for orders for the summer season, and some are supplied with work until the close of the year. The Sunday fettering question, which has created so much discussion, and attracted such attention in the neighbourhood, has received the consideration of Mr. Hughes, M.P., the arbitrator on the last wages question, who has decided that the men are honourably bound to continue their present mode of working until the end of the current year, when the contract made through his intervention will terminate.

The Cleveland Iron Trade Foremen's Association closed its first session on Saturday, when the members (nearly 60 in number) visited the Eston Mines, belonging to Messrs. Bolekow, Vaughan, and Co. Mr. Edward Williams, the company's manager, who was the first honorary member of the Association, accompanied the gentlemen through these interesting mines (out of which about 2500 tons of stone per day is taken), and readily answered the many questions put by his enquiring visitors. After spending the afternoon in the inspection of the workings and machinery, the company, joined by between 30 and 40 of the mines foremen, was provided by Mr. Williams with a capital lunch, after which the visitors were conveyed by special train to Middlesbrough.

A further batch of workmen arrived at Middlesbrough from London, by water, on Sunday night, and went forward on Monday morning to the ironstone mines where they are to be engaged. There were also landed by the same vessel about 40 riveters, who will be employed by Messrs. Backhouse and Dixon, shipbuilders, Middlesbrough.

The opening of the Mersey and Darlington Railway was an event of some importance to this district. The line will be, when completed, about eight miles in length. Six and a half miles have been finished, at a cost of about 75000 per mile. The railway has been constructed in order to open out and work some large and valuable deposits of limestone, said to contain an average of 95 to 98 per cent. of carbonate of lime. Before the Mersey Mines can be reached a rock of limestone 80 ft. thick will have to be cut through. About a million tons of limestone are consumed in the Cleveland district annually, and the bulk of this is brought from the neighbourhood of Stanhope, which is twice the distance from Middlesbrough than the Mersey Quarries will be, thus effecting a great saving in railway dues. Besides the limestone the company will be able to work the Gathley freestone, a fine building stone, and deliver it (say, for instance) at Darlington at a saving of about 6s. per ton upon the present carting cost. The Mersey Mining Company are working rich lodes of lead and copper ores (specimens of which were interestingly inspected by the visitors on Wednesday), and some of the directors are sanguine of the results of the working of these veins. The company's royalty

is something like 2000 acres, 500 of which is freehold, the remainder belonging to the Duchess Eleanor of Northumberland; about 1000 acres of this the directors expect is limestone. Mr. H. K. Spark (the Chairman of the company) presided over the luncheon, to which about 150 ladies and gentlemen sat down, and the village of Barton (the present terminus of the new railway) was on the occasion *en fete*.

A Polytechnic Exhibition was opened at Darlington on Monday, and will remain open for some time. Many of the articles on view are for the International Exhibition next year. Amongst the thousand and one things to be seen we observed Mr. J. Cooke's fan for ventilating mines, Calow's safety-cage (shown by Mr. J. Marley, M.E., of Darlington), Howard's safety-boiler, Hopkins' patent safety-valve, and Broadbent's smoke-preventer.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

June 9.—There was a slight interruption to business, owing to the holidays, but the works are once more in their ordinary state, the men, as a rule, being fairly employed at the leading iron-producing establishments. The foundries are kept well going, and there is now a very large output of pig-iron. There is no change to be noticed with regard to the Coal Trade, the demand for household qualities being still of a rather limited character, the fine weather of the last week or two having a strong tendency not only to check sales, but to limit the stocks held by merchants. Steam Coal is now in very fair demand, and a good deal is being sent out of the district. The connecting of the Eastern and the Midland Railway with the new dock at Lynn, which has just taken place, will be of some advantage to the coal owners of Derbyshire, as the coal can be sent by railway direct. At the present time a considerable proportion of the coal sent to Lynn is shipped from Goole and the other Yorkshire ports.

Most of the heavy branches of the iron trade in Sheffield are in active work, there being evidently a brisk demand for heavy plates for our iron-clads and general shipping. This important department of the iron trade, which may be said to be indigenous to the town, appears to be in a highly flourishing state, and the reputation which the Sheffield plates enjoys all over the world, and the efforts being made by all maritime countries to obtain casing for ships capable of resisting the powerful projectiles now made, will, doubtless, lead to a constantly increasing demand for them. Rails and general railway material, including locomotives, are in brisk request, and the Bessemer steel works are very busy. In the Rotherham district the works are kept well going. There is, however, no change with regard to the business doing in coal, household sorts being still very quiet. The Thorncliffe Collieries are being worked the same as they have been for several weeks past, the men being allowed to go about their business in comparative quietness. When the new houses are built there will be accommodation for as many men as will be required, and it is anticipated that on their being occupied the "free labour" principle will be fully established at the collieries of Messrs. Newton and Chambers. On Friday last the Miners' Association paid the men who are out an extra week's pay, for themselves and families to partake of the pleasures of Whitsuntide. The collieries in the Barnsley district are now far from busy, and as most of them have only been working about four days a week, the holidays have in no way interrupted the ordinary trade. House coal is not now much enquired for, and a very moderate tonnage is being sent to London over the Great Northern. In steam coal a very fair business is being done to Hull and Grimsby for shipment. A good deal of coal and coke is being sent into Lincolnshire for the use of the furnaces there.

The strike at Messrs. Bowers' colliery, near Normanton, still continues, the association in that district—which is in no way connected with the South Yorkshire one—paying the men some 6s. or 7s. a week, whilst the glass bottle makers of Castleford give an occasional dose of bread. Mr. Dixon, the agent of the West Riding miners, attended the council meeting of the South Yorkshire Association, on Monday, with a view of obtaining some money, either by gift or by loan; he was, however, informed that the association, having some 800 or 900 then on their own fund, could render no assistance.

THE MINERALS IN THE MIDLAND.—There is probably no line of railway in the kingdom which passes through such an extent of mineral country as the Midland, or which is likely to be benefited to anything like the same extent by the development of the wealth which at present is either entirely undisturbed or in course of being opened out. In Derbyshire and the adjoining counties to the south there is just now more collieries being sunk than in any other part of the kingdom, whilst their contiguity to London gives them a great advantage over Lancashire and Yorkshire, or the North of England. Already Derbyshire supplies more than two-fifths of all the coal sent to London by railway, whilst the quantity is increasing to a much greater extent than has been the case hitherto. Commencing with one of the principal terminal points of the line, Leeds, it passes through a rich mineral district to Normanton, which is now becoming an important centre of the coal interest, several new collieries being now opened out, whilst the extensive firms of Briggs and Co. (Limited), Pope and Pearson, Lock and Warrington, Wilkes and Co., and others, are extending their operations. In the neighbourhood of Normanton more collieries are being opened out than in any other part of Yorkshire, whilst the coal raised as already to Barnsley will also throw a good deal of coal on to the main system, as already one of the largest collieries in Yorkshire is being sunk by the side of the line, with a view to taking advantage of the facilities it will afford for reaching the London and southern markets.

Derbyshire is now the principal feeder of the Midland to London, the produce of the county last year having considerably exceeded 5,000,000 tons. In 1868 the actual weight of coal which went over the Midland system was 4,067,505 tons, whilst last year it would exceed 6,500,000 tons, and there is every appearance that even that large tonnage will be greatly exceeded this year, owing to the fact that large collieries being opened out in various places on the line. The minerals in the Unstone Valley, on the new branch between Sheffield and Chesterfield, are now being developed, and will before long throw something like half a million tons per year on to the main line, one colliery being sunk by the West Staveley Company, it is estimated, will raise from 800 to 1000 tons daily. On the Erewash Valley branch, which runs from Chesterfield by way of Trent to Llocester and Nottingham, in addition to the present collieries working, and from which a good deal of coal is sent to London and Northampton, some very extensive coal fields are likely to be shortly opened out, whilst within 1/4 mile of Nottingham the new colliery commenced by the late Sir R. Clifton, and which is quite close to the line, will largely increase the tonnage conveyed to the South by the Midland Railway.

From the above facts it will be seen that the present large tonnage of coal conveyed over the Midland system will, in the course of a comparatively short time, be greatly increased, notwithstanding the fact that the quantity carried by the company to London, increased from 183,701 tons in 1868 to 759,387 tons in 1869. For the first quarter of the present year there was sent to London by the Midland line 239,020 tons, against 121,382 tons for the same period of 1869. In addition to the carriage of coal, the Midland passes through some extensive ironstone fields, those of Derbyshire yielding about 400,000 tons per annum. In Northamptonshire, also, from Market Harborough to Wellingborough, the vast and valuable beds of ironstone are being developed, and at the present time the Midland is conveying from the county of Northampton into Derbyshire and Yorkshire upwards of 3000 tons a week, whilst a much larger tonnage will very shortly be sent over the line, as there is every prospect of the Cleveland iron-makers mixing their own ores with some of the Northamptonshire, which is of a highly silicious character, and would, consequently, aid in producing a fine quality of iron. In the western part of the Midland system, as far as Bristol and Bath, there are extensive beds of coal and hematite ore, but as yet, more especially the latter, only very partially developed, and which may be noticed more fully hereafter.

THE SOUTH YORKSHIRE STEAM COAL OWNERS' ASSOCIATION.—A meeting of this association was held on Saturday, at Doncaster, Mr. C. Bartholomew in the chair. The transactions which had taken place with regard to commencing operations at Hull, on the 1st inst., were ratified, and it was agreed that an office should be taken at the Trinity House, and furnished for the transaction of the business of the association. A deputation was appointed to wait on Earl Fitzwilliam, Lord Lieutenant of the West Riding, with a view to his lordship becoming the President of the Association. Earl Fitzwilliam is not only a large colliery and ironstone mine proprietor, but is also the owner of several very large and valuable coal fields, now being worked in South Yorkshire, so that there is every likelihood of his lordship accepting the office of president of an association all the members of which are amongst the largest colliery owners in Yorkshire. It was stated that the association was now in a position to supply direct from their collieries steam coal to any extent required, so that the port of Hull would be placed in equally as good a position as Newcastle and the Welsh ports were for shipping direct. At the expiration of the present contract, a very confident feeling was expressed that a large share of the continental business would be thrown into the hands of the association, as it was well known that the hard steam coal of South Yorkshire had many advantages over that of some other districts, being especially adapted for hot climates, and for steamers working at high pressure and with compound cylin-

ders, as it does not fall or disintegrate under the action of moisture and heat. Another important advantage offered by the association is that the coal will not be mixed, as is too often done, an inferior with a better quality, but will be sent direct from the colliery, as desired, and will, therefore, be of uniform quality, and from the South Yorkshire coal field only. The firms at present constituting the association are—the Wombwell Main Coal Company; the Lund Hill Colliery Company; Mitchell, Bartholomew, and Tyas, Edmunds and Swarthe Main Collieries; Messrs. Crofts and Baty, Darley Main and Pinder Oaks Collieries; Mr. W. Day, Mount Osborne and Agnes Main Collieries; T. Dymond and Co., the Oaks Colliery; the Darfield Main Coal Company; Craik and Co., East Gawber Colliery; the Denaby Main Coal Company, Mexborough; and the Aldwark Main Colliery Company, near Rotherham. As the association will be the means of doing away with the profits hitherto made by the broker and merchant—generally much larger than falls to the share of the coalowner—the foreign consumers will be able to ensure a fine quality of coal on better terms than they have hitherto been supplied.

THE RECENT COLLIERY ACCIDENT NEAR WIGAN.—The inquest on the bodies of the three colliers killed by the fall of a large stone at Waltham Colliery, near Wigan, has resulted in a verdict of "Accidental Death." Mr. Higson, Mine Inspector, who was present, said he did not remember having ever seen a fall so immense. He severely censured the man who was working in the place adjacent to that in which the stone fell for not sending his drawers for props when he knew there were props to be had, and when he felt the place to be unsafe. He thought he should bring the case of Henry Whalley before the magistrates. The deceased man, Fatchurst, had not used the props provided for him; but still he thought such a fall as there had been would crush any amount of timber. Underlookers or firemen would have to be made responsible by Act of Parliament for propping.

REPORT FROM SCOTLAND.

June 8.—We have had what some of our friends here style an "outrageously" strong market for Pig-Iron, speculators—and they are principally English—buying up every pound of pig-iron that can be got, and are sending it into store at the rate of 150 tons an hour, or from 12,000 to 15,000 tons a week. These operations are clearing off makers' stocks rapidly; and, supposing them to continue till the month of August next, when the Fall shipments take place, merchants will have to purchase on speculators' terms, and in all probability in a market all but pressed up to the bursting point. The pig-iron market at the present time sufficiently strong to bear considerable pressure, but it will not bear "rigging"; and there have been visits made from the metropolis of some few of these gentlemen, which is making the merchants and brokers here operate cautiously, and sometimes to suspend operations altogether. With this style of buying prices were pushed, at the close of last week, to 60s. 1½d. prompt, and 60s. 3d. one month. This week the same course was pursued, and on Monday 60s. 9d. cash, and 61s. 30 days, was paid for various lots; while yesterday an advance was required on these prices on late 'Change, on account of a rumoured reduction of \$2 per ton on the import duty in the United States. The opening transactions this morning were done at 61s. 6d. cash, when several thousand tons changed hands, but afterwards prices gave way, and down to 60s. 9d. cash and 61s. one month was accepted. On late 'Change these quotations improved to 60s. 10½d., and 61s. cash; and 61s. 1½d. and 61s. 4d. one month for about 8000 tons. No. 1 g.m.b., 61s.; No. 3, 59s. 6d.; Coltness and Gartsherrie, No. 1, 67s.; Langloan and Shotts, 62s.; all Eglinton brands, 61s. Market shifts to-day. The shipments of pig-iron from the Scotch ports for the week were in advance of those of last year, those for the week ending yesterday being 15,740 tons, against 10,832 tons in the corresponding week of last year. The imports from Middlesbrough are also largely on the increase, and pretty heavy deliveries are due over the remaining months of this year. The total quantity of pig-iron in store at the end of May was 382,245 tons, which is an increase on the first five months of the year of 48,733 tons drawn from makers' stores, with several additional smelting furnaces in blast over those of last year. The Malleable Iron Trade is being carried on with some restrictions, the output being limited by from one-fourth to three-fourths of the ordinary make. Of course, this is occasioned by the strike and lock-out of the puddlers, who are by this means crippling themselves while seeking to arrest the progress of their own trade. At a private meeting of the ironmasters, yesterday, we learn that they could not see their way to accept of the proposed arbitration in their circumstances; and that they resolved to keep their works closed till the puddlers returned on the terms which they formerly refused. Some few of the young men have gone south, but everybody in the trade knows that puddlers cannot migrate with the celerity of swallows; and the fact is that the great majority, if taken individually, would eagerly accept work at once: it is the body *en masse* that are on strike, and another week or two of "short commons" will send them to their furnaces without a doubt. As we have shown over and over again, Scotch makers are not participating in the recent rise in manufactured iron unless to a very limited extent, and hence it was most inopportune and inconsiderate for the puddlers to strike before their employers were really in possession of the advance.

At an aggregate meeting of the locked-out puddlers, held at Holytown, on Tuesday, to hear the answer of the employers to the proffered arbitration on behalf of the men, the reports were regarded as most unsatisfactory, and the following resolutions were agreed to, *nem. con.*:

"1. That having made the offer of arbitration we are still willing to adhere to it, but that we cannot now approach the employers, but they must come to us."
"2. That all leave the locality as soon as possible for other fields of labour." The puddlers were evidently disappointed, and they resolved to forward to all their employers the rules of the North of England Arbitration Board as the basis of adjustment for existing differences.

On Wednesday afternoon the fourth furnace at the Quarter Iron Works was set in operation, and we learn two other furnaces are to be built forthwith. A new pit has also been sunk, and is now in full operation.

The market for Finished Iron is firm, and we are shipping fencing bars, nail-rod, iron wire, galvanised iron, lamp pillars, pipes, and hollow ware to a considerable extent; and there is still a large home demand for flat bars, rivet and angle iron, and plates.

The demand for splint coal for shipment is tolerably active, but the enquiry for household qualities is very limited. Our last quotations are held easy, and satisfactory business can be done under market prices. During the week the shipments were 28,387 tons, against the larger total of 35,422 tons in the same week of 1869. Ironmasters' colliers are well employed, but coalmasters' pits are working short time in several districts, and the men are still agitating for an advance of wages.

Several mineral properties—ironstone, gas and splint coal, and shale—are in the market, for private sale and by auction.

The Silver Mines at Bathgate have been so far proved that their further profitable working is almost placed beyond a doubt. While Mr. Aitken's (the lessee of the mines) workmen were employed quarrying some limestone for his kilns, on Saturday last, they came upon a vein of silver and lead ore, from 15 to 20 in. thick; and a few yards from this one another was discovered, not quite so thick, but considerably richer. The quarry is being worked north and south, but the silver and lead ores yet discovered cross the limestone, and run east and west. These opportune discoveries have led the lessee to set about making preparations for working the silver and other interjected minerals, which are held on lease from the Earl of Hopetoun. This "find" may encourage the initiated to go a prospecting.

The first section of the Callander and Oban Railway, which was commenced in October, 1866, has just been opened. This section is from Callander to Glen-Ogle, a distance of about 17 miles, and within 3½ miles of Killin. Only one line of rails has been laid down, but ground has been acquired for a second, should that be found necessary. The cost has been from 10,000l. to 12,000l. per mile. At one time between 13,000 and 14,000 men were employed in its construction.

The Clyde shipbuilders are all full manned, and during May they launched 19 vessels, of about 13,000 tons.

At a meeting of the miners of the Wishaw district on Tuesday evening, Mr. Brown, of Leeds, said—

"He had that day returned from Ayrshire, where he was sorry to see in some places men toiling 12 hours a day; but, from the agitation at present existing, he hoped soon to find throughout the West of Scotland the eight-hour movement the rule, not the exception. The speaker referred to a rumour that he was sent down by the Yorkshire mine owners to create an agitation, provoke the Scotch miners to strike, and thereby turn the trade towards the English market, and repudiate such an idea."

Notwithstanding this disclaimer, it is quite unreasonable to suppose that either Mr. McDonald or Mr. Brown are doing all this agitation "without money and without price."

June 9.—Pig-Iron quiet in the forenoon, with limited business at about 61s. prompt cash. In the afternoon there was more pressure

to sell for immediate payment, 60s. 9d. and 60s. 7½d. prompt was accepted, and we close—buyers, 60s. 6d.; sellers, 60s. 7½d. cash; and 61s., 30 days.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 9.—The Whitsun week is generally a slack one in South Staffordshire, and not much has been doing at the works since Saturday. Festivals are, however, kept more decorously than they used to be. People are inclined to enjoy themselves in a different, and certainly in a more wholesome and decent fashion. Trips to Matlock and Malvern, or to the sea coast, are better than heavy swills at a tap, with the sequence of fights, and a repletion of the police cells; and, bad as Staffordshire may be in its mineral districts, North and South, it is improving, and the rising generation have a wider and higher range of enjoyment than their fathers.

The Iron Trade is not particularly changed. The demand for rails is good, but there are not many being rolled in South Staffordshire, and no very great quantity in the North. In the former district there is a quiet flow of orders, without any pressure, and the cessation of the Scotch works, on account of the strike, has not had as much effect as might have been anticipated. There is still a good deal of underselling, and the works are not fully employed. Possibly the desire to get a good price for pig-iron, and for coal and ironstone, in the forthcoming renewal of the quarterly contracts may be giving rather too *couleur de rose* a hue to reports as to the state of the trade just now. It is much better than it was, but hardly justifies all the representations put forward.

The investigation into the cause of the boiler explosion at Kidsgrove dissipated all the mystery which appeared at first to attach to the accident. According to the accounts, the boilers were watched with a lynx-eyed sharpness, which rendered it impossible that any defect could exist for many days without being detected and remedied. Yet Mr. Longridge, of Manchester, looks at the remains, and can at once point out how by corrosion and the action of sulphurous acid derived from combustion the boiler has been weakened until it could no longer sustain the pressure to which it was exposed. Mr. Longridge stated that some of the deposit taken from the external surface of the boiler contained 41·6 per cent. of sulphurous acid. He added that the weak place could easily have been discovered on due examination by a competent person, and that the boiler had clearly been dangerous to work for some time past. The jury returned a verdict of "Accidental Death," but appended a recommendation to their verdict "that the whole of the boilers at the works be periodically inspected by a competent, scientific man." There are now 13 persons dead from the accident. A handsome sum has been contributed for the support of the widows and children of those who were married. The accident should bring home to every owner of a steam-boiler the necessity for the regular periodical inspection by a really competent person.

The *Illustrated Midland News*, which is published in Birmingham, has a full and interesting account of the lock and safe works of Mr. Chubb, the former at Wolverhampton and the latter in London. After noticing the various improvements made in the locks by the proprietor, and by the manager of the Wolverhampton works, Mr. Hunter, the writer says of the lock works at Wolverhampton:—"The lock factory is under the entire control of Mr. Ebenezer Hunter, whose inventive genius has done much to advance the reputation of the establishment. Mr. Hunter received us very courteously on the occasion of our visit, and accompanied us through the various workshops. The most striking feature of the interior of Chubb's factory is a negative one. There is no machinery. Mr. Hunter prides himself on the circumstance that all the locks are made exclusively by hand, just as they were made half a century ago. In a shop of 20 workpeople a foot-lathe is the only visible aid to the workman, beyond the vice and a formidable array of files and hammers. There are in all 100 workpeople, who produce 4000 locks per year. The security of Chubb's locks lies in their illimitable variety, and this can only be attained to perfection by hand-labour, machinery being only applied with advantage when a large quantity of articles exactly alike are required. It was a notable feature in each department of the factory that the men looked well clothed, well fed, and, in fact, presented a much better appearance than that which characterises the locksmiths of Wilkenhall, Short Heath, and New Invention. In every shop we noticed some evidence of mental culture in the shape of newspapers and periodicals, which Mr. Hunter told us were the solace of every leisure moment. The men have also established a very creditable library, to which Mr. Chubb, Mr. Hunter, Sir John Morris, and the Earl Dartmouth have liberally contributed, and to which Her Majesty the Queen lately presented a copy of the "Journal of our Life in the Highlands." The display of locks and latches by Messrs. Chubb in the Wolverhampton Exhibition, appropriately termed the "lock trophy," was, doubtless, seen and admired by thousands of our readers. It was certainly the most effective display of locks and keys ever exhibited."

The Dudley Correspondent of the *Wolverhampton Chronicle* writes:—"We are far advanced in the quarter, and up to now the orders which have been coming in are not of so satisfactory a character as could be wished. There seems to be some prospect, however, as the season advances that orders will become more numerous. Looking at things generally, prices are far from being so remunerative as could be wished, and it is rather questionable if rates will go any higher; indeed, with bars at 61s. it is not likely that any advance will take place. There is no standard, however, to govern the trade in this matter except demand; when prices are forced up one of these things will happen—either the demand for the article will diminish, or the trade will go into other districts, such has been the case since the last rise. The only thing that tells in our favour at the present time is that our great competitors in the iron trade are full of orders, and are anxious not to take in any more; of necessity, therefore, some will eventually flow into these districts. This is just what is taking place at this time in reference to the pig trade, which is in a better position than it has been for years past. It is pretty well understood that the "make" is hardly up to the demand, and especially for some sorts of pig-iron, hence it is that the market has become more buoyant in these localities, but still there is no probability of any great advance taking place. Some of the leading men in the trade, and men of great experience too, feeling rather confident on this point have sold largely in advance at existing rates. There has been a good demand for coal for works purposes, and the proprietors of blast-furnaces have been laying in considerable stocks to carry them over the holidays, as little or no work will be done at the pits this week. There is much haste to get the ironstone, and as a result the argillaceous ironstones of the district are stiffening in price, and more eagerly sought after than they were. The labour market in some instances is far from being active, but in the large "fitting yards" there are a considerable number of hands employed, and have full work."

REPORT FROM MONMOUTH AND SOUTH WALES.

June 9.—The position of the Iron Trade has changed to no noticeable extent since last week, but what slight movement may have been made has been favourable. Since last report another holiday season has been entered upon, and some little abatement has taken place in operations at the numerous establishments of the district; but makers, however, cannot allow that much time, which is so valuable to them at present, should be lost, and probably before the week has closed the usual briskness will prevail. The continued dry and intensely hot season, which no doubt is favourable to holiday keeping, is not altogether calculated to aid business. The prolonged drought is causing some alarm in regard to the water supplies, and the increasing heat will necessarily frustrate operations to some extent, as the hands will experience greater difficulty in withstanding the fires of furnace and forge. Makers will, therefore, with such a pressure of business as the year is yet likely to bring, have numerous difficulties to contend with in order to meet the calls upon them. It is hardly probable that much fresh business will be transacted until makers have succeeded in clearing off some of the most urgent engagements on their books, which will, perhaps, be in about two months' time. It may well be concluded, therefore, that buyers now in the market will have but little chance of placing their orders at present quotations, and that considerably improved prices for all materials, but, perhaps, railway iron more especially, may be safely reckoned on before the summer is over. On Russian and American account an occasional heavy order is accepted, as from those countries a large demand is pretty certain to be kept up for some time to come, and extensive clearances will from week to week be made from the local ports. In this respect Cardiff and Newport are particularly busy, several thousand tons of rails and accessories being sent down from the works for shipment every week. Viewing the future of the iron trade in all its aspects, any other conclusion can scarcely be arrived at than that a long period of prosperity may be looked forward to. From all the mining and iron-making districts emigration is continually going on, and it must be clear to all that from time to time, as the crowds of people who leave the country spread over the world, forming new colonies and augmenting those already formed, new railways will be constructed, and hence new sources of demand for iron will spring up as time goes on. From the continental markets there is a fair demand, which will, in all probability, be kept up; and, although but little is being done at present on Indian account, there

is yet no doubt a considerable amount of business to be done in that quarter. There is no change to note in the home demand, and makers evince but little anxiety respecting this department. In the Tin-plate Trade business continues tolerably active, but makers still find current quotations unremunerative, owing to the high price of tin.

What little change has taken place in the Steam Coal Trade since last week has been favourable. At the local ports, owing to the more regular arrival of ships, coal shipments have been more active, and, consequently, proprietors have been able to keep their pits more regularly and fully employed, so that complaints in that direction have been lessened. The enquiry from all the principal foreign markets is tolerably good, and had it not been for the late irregularity in shipping, there would not be much to complain of as regards the position of the trade; still the advance in prices, consequent upon the rise in wages, has, no doubt, induced buyers to purchase more sparingly than otherwise they might have done. In the House Coal Trade there is a degree of quietude evinced which, taking into consideration the unusually dry and hot season, does not cause much surprise.

At the Downals Iron Company's Works a series of experiments are being tried, with a view to produce a better fusion of steel ingots by the application of gas flame. Hitherto the ingots that could not be worked by the Bessemer process were sent as waste to the Sheffield cutlers, and should the experiment be successful, a great saving of material will be effected.

The directors of the Midland Company have paid what may be termed a flying visit to South Wales during the last few days. They have visited Swansea, Newport, and other places, and made a minute inspection of the works now in progress at the Alexandra Dock, Newport. It is believed that the object of their visit is to extend the connections of the Midland with the important iron and coal districts of South Wales, and there is no doubt that their advent into the competition to carry South Wales traffic will be hailed with satisfaction by the public generally. The Midland has always been characterised for its spirited management, and to ensure the development of such a vast mineral district as South Wales it is highly necessary that some greater enterprise should be shown by the railway companies having the control of the district than is now the case.

It is satisfactory to find that the prosperity which has begun to be felt in the iron trade has had a favourable effect upon the shares of the iron companies. The Ebbw Vale Company's shares, which for a long time had been much depressed in the market, have gone up some 3½. Within the last fortnight, and they are now 20½ to 21. Notice has been given of the closing of the transfer books of the company prior to the annual meeting, when it is expected that an increasing dividend will be declared.

At the Pontypridd Police Court, on Wednesday, two colliers, named Daniel Davies and William Jones, who were employed in the Danerwen Colliery, were summoned before the magistrates for having their lamps open in the colliery, contrary to the rules. The defendants had opened their lamps with a key they had in their possession and re-lighted them. Jones was fined 5s. and costs, and Davies 20s. and costs.

SOUTH WALES COAL.—During the discussion in the House of Commons on the Navy Estimates, and to which reference was made in last week's Journal, Sir John Hay said—There was a colliery in Wales, called the Hirwain Colliery, the coal of which might be applied to certain uses, but was of a dangerous and inferior character, and was condemned by the proper officers as unfit to be used in the navy from the probability that ships carrying it would be set on fire. Nevertheless, 18,000 tons of that coal were received at Sheerness, having been purchased at a lowish rate. Coals for the Admiralty were no longer bought by tender, but by a friend of the Secretary of the Admiralty, a Mr. McCulloch, who, it was understood, received 3d. a ton from the Admiralty for every ton of coal received by them—what he might receive at the other end, of course, nobody knew. There was a gentleman of the same name as Mr. McCulloch who was the manager of the Hirwain Colliery; he did not know whether they were related in any way, but Hirwain coal was certainly bought by Mr. McCulloch. Some of the coal was placed on board the *Megara*, and when on the line she caught fire, and might have been lost owing to the fuel she carried. A return had been moved for upon the subject, but the right hon. gentleman proposed to give a much larger return than was asked for, and it had not yet been produced. Mr. Baxter, after completely refuting two of the charges brought against the purchase department—whilst Sir J. Hay afterwards admitted being based upon "report"—said:—He came to the third charge, which was that they had been guilty of using Hirwain coal. This was a hard anthracite coal of South Wales, and ought not to be used by itself, but which was one of the very best coals for mixing with bituminous coal. In one or two instances it was naturally complained of by the officers of the dockyards. A gentleman connected with the purchase department, whom he never saw or heard of until he became secretary to the Admiralty, was sent down to show the officers how it ought to be used, and ought to be mixed with bituminous coal; and in both instances the report was that, having had the matter explained to them, the mixture was highly satisfactory. With respect to the *Megara*, he regretted that the papers were not on the table, but, when produced, they would not support any of the accusations which had been made.—Sir G. Eliphinstone, who followed, was of opinion that the Admiralty ought to employ patent fuel. The French bought the best Welsh coal. They crushed it, and the result was more steam and better work, while the ships were kept clean. At present the smoke corroded the rigging, destroyed the clothing of the ship's company, and deteriorated every part of the ship. The present source of supply was maintained for nothing else than in order to get political capital for the Government.

COLLIERY DISPUTE—WHO IS RIGHT?—Mr. Thomas Gidlow, the proprietor of collieries at Hindley, appeared at the Wigan Police Court, on Saturday, on an information laid by Wm. Hargreaves, charging him with having at Hindley, between January, 1867, and December, 1869, stolen and severed with intent to steal certain coal, the property of the complainant, in the Arley Coal Mine.—Mr. Le-ree appeared for the prosecution, and Mr. Torr for the defence.—The plaintiff lives at Darley Hall, Bolton, and owns a couple of small estates at Hindley. The defendant, who is a coal proprietor, lives at Heaton. The case set up was to the effect that the defendant, being the lessor of the coal under certain lands in Hindley, had, without any arrangement or contract with the prosecutor, deliberately worked through coal belonging to the latter, a strip about 100 yards in width, in order to obtain access to an extensive coal field on the other side. The cross-examination of Mr. Hargreaves disclosed the case for the defence. It was that some time before the alleged felony a verbal agreement had been come to between Mr. Gidlow and Mr. Gidlow's nephew on the one part, and Mr. Hargreaves on the other, that defendant was to become the lessor of the coal in question on the same terms as were demanded for the coal under an adjacent estate, which was the property of a relative of the prosecutor. That any such arrangement had been made, or that several most important conversations had taken place between Mr. Hargreaves and Charles Gidlow Jackson, defendant's nephew and manager, was positively denied on the one side as it was affirmed on the other.—The magistrates, after deliberating an hour, said they had come to the conclusion the case was not one to send to a jury.

SECOND-HAND ENGINES—IMPORTANT LEGAL DECISION.—In the Court of Chancery, on Wednesday, the Lord Chancellor and Lord Justice Giffard gave an important decision in an appeal from the Vice-Warden in the case of the Great Wheel Busy winding-up. In December, 1868, Mr. Matthew Loam, manager of the West Chiverton Mining Company, arranged with the official liquidator of the Great Wheel Busy to purchase a steam-engine and stamps, and he affixed his signature to the following acceptance:—"I accept 30-in. steam-engine and stamps, now lying at the Great Wheel Busy and the Hayle Foundry, according to specification, exclusive of two boilers, for the sum of \$525, and promise to pay 300l. in cash, and the balance in equal instalments, at three and six months." The engine seemed to be in parts; some parts had been got rid of, and were not now forthcoming; other parts were at Hayle Foundry, ready to be delivered according to specification; other parts were not even made, but West Chiverton claimed a perfect engine. On the other side, it was contended that the functions of the official liquidator were to convert into money all the available assets of the company; he could not, consequently, supply what did not exist. The Lord Chancellor was inclined to think that the purchase was not intended to be limited, but that it included a perfect engine. What was described in the specification the appellants ought to have. Lord Justice Giffard concurred, and the order of the Stannaries Court was consequently discharged.

MINING MAPS.—We invite the attention of our readers to several useful maps advertised in our present Journal.

WIRE TRAMWAY, BRIGHTON.

NOTICE IS HEREBY GIVEN, that the FIVE MILE EXHIBITION LINE OF HODGSON'S SYSTEM OF WIRE ROPE TRANSPORT, on the Brighton Downs at Kemp Town, will be WORKED from One to Four on SATURDAY and MONDAY AFTERNOONS till the end of September, 1870. On other days by arrangement.

For cards to view, and information, apply to—
M. BEALE, 21, Gresham-street, London, E.C.

MACHINERY FOR MINES AND SLATE QUARRIES.

SAWING, PLANING, DRESSING, AND ROCK-BORING MACHINES FOR SLATE.
WATER BALANCES, WATER WHEELS, WINDING AND PUMPING MACHINERY; and PLANT of every description for MINES or QUARRIES.
STEAM ENGINES—STATIONARY, MARINE, or LOCOMOTIVE.
BOILERS AND GIRDER WORK.
SHAFTING, PULLEYS, AND GENERAL MILLWORK.
MACHINERY AND GENERAL CASTINGS.
SPUR and BEVEL WHEELS of any diameter or pitch moulded by machinery.
DE WINTON AND CO.,
UNION IRON WORKS, CARNARVON.

VALUABLE CORNISH MINING MACHINERY.

MESSRS. J. C. LANYON AND SON have FOR SALE a very superior lot of the above, including—
80, 60, 40, 30, and 24 inch PUMPING ENGINES;
24 inch ROTARY ENGINE, with CAPSTAN;
24 inch ditto, with CAPSTAN and CRUSHER;
Several good BOILERS;
A large assortment of PITWORK of all sizes; STRAPPING PLATES, rolled and faggoted, all of which are secondhand, in good condition, and will be sold on very reasonable terms.
For particulars, apply to—
LANYON AND SON, MERCHANTS, REDRUTH.
Dated Redruth, Feb. 23, 1870.

SECONDHAND MINING MACHINERY FOR SALE, IN FIRST-RATE CONDITION.

PUMPING ENGINES, of various sizes,—viz., 80 in., 70 in., 60 in., 50 in., 40 in., 30 in.
WINDING ENGINES, STAMPING ENGINES, STEAM CAPSTANS, and CRUSHERS of various sizes.
A NUMBER OF BOILERS.
PITWORK of all descriptions, and all kinds of MATERIALS required for MINING PURPOSES.
TO BE SOLD, AT MODERATE PRICES.

For further particulars, apply to—

**MESSRS. HARVEY AND CO.,
ENGINEERS AND GENERAL MERCHANTS,
HAYLE, CORNWALL,
AND HAYLE FOUNDRY WHARF, NINE ELMS, LONDON,**

MANUFACTURERS OF

PUMPING and other LAND ENGINES and MARINE STEAM ENGINES of the largest kind in use, SUGAR MACHINERY, MILLWORK, MINING MACHINERY, and MACHINERY IN GENERAL.
SHIPBUILDERS IN WOOD AND IRON.

SOUTH EXMOUTH MINE, HENNOCK, DEVON.

FOR SALE, BY PRIVATE CONTRACT, the following, viz.:—
40 in. cylinder PUMPING ENGINE.
25 in. cylinder WHIM ENGINE, with CRUSHER attached.
60 fms. 11 and 12 in. PUMPS in shaft.
30 fms. 11 and 12 in. PUMPS at surface.
Timber, and various useful mining materials.
Apply to Capt. JOHN CORNISH, Frank Mills Mine, Christow; or to Mr. J. O. HARRIS, Public Accountant, 2, Gandy-street, Exeter.

FOR SALE, BY PRIVATE CONTRACT, at PAR CONSOLS
MINE, near PAR STATION, CORNWALL,

EIGHT STEAM ENGINES,

Including ONE 80 in. (with BOILERS), for pumping, stamping, and drawing purposes; THREE HUNDRED PUMPS, from 6 in. to 20 in.; H and door-plates; hammered iron rod plates; rail, scrap, and cast iron; with a large quantity of useful MINING MATERIALS.
For particulars, apply to Capt. PUCKEY, at the counting-house.

**WILLIAMS'S PERRAN FOUNDRY COMPANY,
CORNWALL,**

MANUFACTURERS OF PUMPING and OTHER ENGINES and GENERAL MACHINERY, have FOR SALE:—

ONE 36 in. PUMPING ENGINE, secondhand.
ONE 30 in. PUMPING ENGINE, secondhand.
ONE 8 in. HORIZONTAL HIGH-PRESSURE ENGINE, new.
Several Cornish BOILERS.
Also a large assortment of NEW and SECONDHAND PITWORK, at moderate prices.
LONDON OFFICES,—1 and 2, GREAT WINCHESTER STREET BUILDINGS, E.C.

FOR SALE, cheap, several FIRST-CLASS NEW PORTABLE
STEAM ENGINES, with all recent improvements, and guaranteed;
9-horse power, 12-horse power, and 25-horse power, ready for delivery.
Superior PIT WINDING GEAR supplied at a short notice, suitable for Portable Engines.
FOR SALE, an excellent SECONDHAND PORTABLE STEAM ENGINE,
with a NEW MORTAR MILL.
Apply to—
BARROWS AND STEWART, ENGINEERS, BANBURY.

FOR SALE,—THE UNDERMENTIONED ENGINES:—
ONE 60 in. cylinder PUMPING ENGINE, with ONE BOILER.
ONE 30 in. cylinder ROTARY STEAM ENGINE, 7 ft. stroke, with or without BOILER, wrought iron fly-wheel shaft, and 10 ton fly-wheel; 12 heads of stamps connected.
ONE 30 in. cylinder PUMPING ENGINE, 9 ft. and 8 ft. stroke, with or without BOILER.
ONE 12 in. cylinder ROTARY STEAM ENGINE, with ONE 6 ton BOILER.
THREE Cornish BOILERS, from 10 to 12 tons each, in excellent condition.
Also, several Cornish CRUSHERS, of various sizes.
A 60 feet WATER WHEEL, with hammered iron round shaft, cast-iron sockets, rings, &c.
For further information, apply to—
W. MATTHEWS, ENGINEER, TAVISTOCK.
Tavistock, June 9th, 1870.

ESTABLISHED MORE THAN HALF A CENTURY.

THE TAVISTOCK FOUNDRY, IRONWORKS AND HAMMER MILLS,

which have been carried on for more than half a century by
MESSRS. GILL AND CO.,
and obtained a

HIGH REPUTATION FOR

SHOVELS AND OTHER TOOLS

as well as for

ENGINEERING AND FOUNDRY WORK

have been purchased by

**MESSRS. NICHOLLS, MATHEWS, AND CO.,
BEDFORD IRONWORKS, TAVISTOCK.**

For thirty years Messrs. NICHOLLS, MATHEWS, and Co., have been the proprietors of the latter works, but have now removed to the

TAVISTOCK FOUNDRY,
where, having the advantage of a never-failing stream of water of upwards of 300-horse power, they will have increased facilities for speedily and satisfactorily executing all orders entrusted to their care.

Manufacturers of STEAM ENGINES and BOILERS, on the newest principle pump work, brass and iron; hammered iron shafts, of all sizes; miners' steel and iron tools.

N. M. and Co. have had a LARGE EXPERIENCE IN PREPARING MACHINERY FOR FOREIGN MINES, as well as selecting competent mechanics to erect the same.

N. M. and Co. have always a LARGE STOCK of SECOND HAND MATERIALS.

NEW EDITION—JUST PUBLISHED.

THE CORNWALL AND DEVON MINING DIRECTORY:

CLASSIFIED IN DISTRICTS;

With the Produce, Number of Shares, Names and Residences of the Pursers and Managers of each Mine, together with the Agents' and Engineers' Names, Pay-days, &c.

By J. WILLIAMS, Commission Agent.

London: Published at the MINING JOURNAL Office, 26, Fleet-street, London, price 2s. 6d.; and to be had of all Booksellers.

INVESTMENTS IN LEAD MINES.—
The DIVIDENDS paid by LEAD MINES for the year have DOUBLED IN AMOUNT in the last ten years, and are likely to continue to increase. Some of the young lead mines will probably become profitable, and rise greatly in value in a short time. Full particulars, with a MAP of the Cardiganshire and Montgomeryshire districts (including Van, Dylife, Plynlimmon, East Darren, South Darren, Lisburne, Cwmystwith, Cefn Brynno, and other mines), can be obtained (price 1s.) on application to J. H. MURCHISON, Esq., No. 8, Austin Friars, London, E.C.

MAPS OF MINING DISTRICTS.

PERSONS DESIROUS OF HAVING MAPS of the following DISTRICTS, or EITHER of THEM, will oblige by addressing their orders to the undersigned:—

ST. AGNES DISTRICT.
ST. JUST DISTRICT.
CAMBORENE, ILLOGAN, REDRUTH, and GWENNAP DISTRICTS.
LELAN and ST. IVES DISTRICTS.
CROWAN (Crown and Abraham) DISTRICT.
LISKEARD (Caradon) DISTRICT.
PERRANZABULOR (Chiverton) DISTRICT.
WHEAL VOR DISTRICT.
VAN DISTRICT.
MINERA DISTRICT.
WENBROOK (Lovell) DISTRICT.
TAVISTOCK and CALSTOCK DISTRICTS.
Price, 21s. each.
R. SYMONS AND SON.
225, Gresham House, Old Broad-street, E.C., or at Truro.

Just published, price 1s., by post 1s. 1d.,
HOW TO MAKE MONEY BY PATENTS:
By CHARLES BARLOW.

London: BARLOW and CLARK, 28, Southampton-buildings, W.C.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the ROYALTON MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING-UP of the above-named company by the Court was, on the 3rd day of June instant, presented to the Vice-Warden of the Stannaries by Thomas Thompson, of No. 12, Old Jewry-chambers, in the City of London, shareholder, a shareholder of the said company, and that the said Petition is directed to be heard before the Vice-Warden, at No. 18, Thuroc-square, Brompton, in the county of Middlesex, on Monday, the 20th day of June instant, at Twelve o'clock at noon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitor, or his agents, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., Secretary of the Vice-Warden, Truro. Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner, his solicitor, or his agents, within twenty-four hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 16th day of June instant, and notice thereof must, at the same time, be given to the petitioner, his solicitor, or his agents.

F. W. SNELL, 1, George-street, Mansion House, London

(Solicitor for the Petitioner).

HODGE, HOCKIN, AND MARRACK, Truro, Cornwall

(Agents for the said Solicitor).

Dated Truro, 7th day of June, 1870.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the CRANE MINING COMPANY.—The Registrar of this Court has appointed MONDAY, the 20th day of June instant, at Eleven o'clock in the forenoon, at the Registrar's Office at Truro, TO SETTLE the LIST OF CONTRIBUTORIES of the above-named company, now made out and deposited at the said Office.

FREDERICK MARSHALL, Registrar of the said Court.
Dated Registrar's Office, Truro, the 9th day of June, 1870.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the NORTH DOLCOATH MINING COMPANY.—By direction of His Honor, the Vice-Warden, Notice is hereby given, that, on Wednesday, the 22nd day of June instant, at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, in the county of Cornwall, this Court will proceed to MAKE a CALL of ONE POUND PER SHARE on all the contributories of the above-named company as present members.

All persons interested therein are entitled to attend personally, or by his solicitor or competent agent, at the time and place aforesaid, to offer objections to such call.
FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, June 8, 1870.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the HALLENBEAGLE and EAST DOWNS MINING COMPANY.—ALL CREDITORS or CLAIMANTS of the above-named company, who have not received notice from the Registrar of the Stannaries of Cornwall that their claims have been already admitted, are hereby required to COME IN and PROVE their SEVERAL DEBTS or CLAIMS at the Registrar's Office, Truro, on Tuesday, the 21st day of June instant, at Eleven o'clock in the forenoon, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such proof.

And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Court Judge, Justice, or any Commissioner of one of the Superior Courts, lawfully authorised to take and receive affidavits and affirmations.
FREDERICK MARSHALL, Registrar.
Dated Truro, the 8th day of June, 1870.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the PENHALL MOOR MINING COMPANY.—ALL CREDITORS or CLAIMANTS of the above-named company who have not received notice from the Registrar of the Stannaries of Cornwall that their claims have been already admitted, are hereby required to COME IN and PROVE their SEVERAL DEBTS or CLAIMS at the Registrar's Office, Truro, on Thursday, the 23rd day of June instant, at Eleven o'clock in the forenoon, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such proof.

And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Court Judge, Justice, or any Commissioner of one of the Superior Courts, lawfully authorised to take and receive affidavits and affirmations.
FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, the 8th day of June, 1870.

VALUABLE MINE AND FISHERY SHARES FOR SALE.

TO BE SOLD, BY AUCTION, at the Western Hotel, Penzance,
on Thursday, June 30th, 1870, at Three o'clock in the afternoon, in such lots as may then be determined on, and subject to such conditions as will then be produced, the following

MINE AND FISHERY SHARES, viz.:—

7 (seventh) SHARES in BOTALLACK MINE, in the parish of St. Just.
2 (second) SHARES in WHEAL OWLES MINE, St. Just.
1 (first) SHARE in LEVANT MINE, St. Just.
4 (fourth) SHARES in BOSWEDDEN and WHEAL CASTLE MINE, St. Just.
2 (second) SHARES in WHEAL BASSETT MINE, in the parish of Illogan.
14 (fourteenth) SHARES in WHEAL MARGARET MINE, in the parish of Lelant.
16 (sixteenth) SHARES in TRELYON CONSOLS MINE, in the parish of Lelant.
61 (sixty-first) SHARES in the CORNWALL FISHING COMPANY, at St. Ives.

The above shares form part of the estate of a gentleman recently deceased, and are offered for sale solely on that account.

Further particulars may be obtained on application to H. THOMAS, Solicitor, 2, Clarence-street, Penzance.—Dated June 6th, 1870.

PARISH OF ROCHE, CORNWALL.

SALE OF CHINA-CLAY WORK AND CLAY.

MR. W. F. CONGDON WILL SELL, BY AUCTION, at Dunn's
Hotel, in the town of St. Austell, on Monday, the 13th day of June, 1870, at Five o'clock in the afternoon, the WELL-KNOWN CLAY WORK, called

OLD LITTLE JOHNS.

Situate in the parish of Roche, with the PITTS, PANS, SHED, and other FITTINGS and APPLIANCES thereon and thereto belonging; also about TWO HUNDRED TONS OF PREPARED CLAY, now on the works and ready for shipment.

The above clay work is held for a term of which about 15 years are unexpired, subject to the very low dues of 2s. per ton, without any minimum rent.

The work is now in full operation, a new stove having recently been opened up. The deposit of clay is very extensive, the quality very good, fit either for potting or bricking purposes, and well known in the market. There is an abundant and never-failing supply of water, and by the erection of a "dry" (for which the work is laid out) a return of from 1200 to 1500 tons per annum may easily be made.

The carriage to Par, via the Burghallow Railway, is moderate.

For viewing, and for further particulars, apply to Capt. MARTIN RICKARD, St. Austell; or to Mr. W. F. CONGDON, Auctioneer, &c., St. Austell.

TO SHIPBUILDERS, ENGINEERS, AND OTHERS.

IN THE SEQUESTRATION OF ALEXANDER HALL AND CO.,

SHIP BUILDERS, ABERDEEN.

PUBLIC SALE (in Lots) of the entire SHIPBUILDING PLANT, TOOLS, and STOCK, including BUILDING SHEDS, BLACKSMITH'S and WORK SHOPS, PATENT SLIP and other erections, with STEAM ENGINES, and all the MACHINERY and TOOLS required for carrying on an extensive business in Wood or Iron Shipbuilding; and a large assortment of valuable STOCK. As also the remainder of the LEASES of the SHIPBUILDING YARDS.

The whole valued at upwards of £18,000.

MR. ROBERT M'LEAR (of Glasgow) has received instructions from JAMES MILNE, Esq., Trustee on Messrs. A. HALL and Co.'s Estate, to SELL the above, BY AUCTION, on the premises, in Aberdeen, on Tuesday, 14th June, and following days, commencing at Twelve o'clock each day.

Catalogues may be had on application to Messrs. MILNE and WALKER, Advocates, Aberdeen; to the Trustee, JAMES MILNE, Esq., Merchant, Aberdeen; or the Auctioneer, St. Mary's Hall, Glasgow.

Particular attention is requested to this important and extensive sale, as the Plant, Tools, Stock, and Materials are of a superior description.

Aberdeen, 14th May, 1870.

NICKEL.

FOR SALE, on account of advanced age and continued ill-health of the present proprietor, a RAW NICKEL ESTABLISHMENT, in full operation, situate in SOUTH GERMANY, with SULPHURET of IRON and NICKEL and FLUOR SPAR QUARRIES belonging to it.

This most productive work commands a considerable water-power in a region abounding in wood, is situate near a railway station, and produces very rich nickelstone (about 60 per cent. N., 24 per cent. Cu. O., 25 per cent. Fr.) from its own ores, which latter are clear of arsenic. The works may also, at a trifling expense, be extended to the production of nickel-copper, clear of sulphur.

Cheap labour, regular working, low taxes, and a moderate price are the great inducements.

For all further particulars, address "D. H., 418," care of Messrs. Haasenstain and Vogler's Advertising Agency, Zurich (Switzerland).

THE WHEAL MARY FLORENCE MINE.

IN LIQUIDATION.

TO BE SOLD, BY TENDER, for the remainder of a term of 21 years, from the 25th day of March, 1864 (subject to the royalties of a minimum yearly rent of £20, and 1-15th dues, to merge in the rent if exceeding the same yearly),

THE LEASE OR SETT OF THIS MINE,

Together with the MACHINERY thereon.

The mine is situated in the well-known mining district of CALLINGTON, CORNWALL, at the foot of Kit Hill, close to the junction of kyllas and granite, and immediately adjoining the Holmbush and Kelly Bray Mines, which have returned large profits.

The sett is traversed its whole length, about 600 fathoms, by four lodes, containing tin and copper, large quantities of which have already been raised and sold. Also a strong and masterly lead lode. It is more valuable by the fact that three cross-courses cut the lodes nearly at right angles. An engine-shaft has been sunk about the centre of the sett to the depth of 33 fathoms. A line of shaft-roads has been attached to the engine, 100 fms. west to Saw's shaft, which shaft has been sunk to the 55 fm. level.

The MACHINERY and PLANT consist of a 25 in. ROTARY ENGINE, with a 9 ton BOILER, and about 70 fms. of 9 in. pitwork, rods, &c., almost equal to new; together with all the requisites for the proper carrying out of the workings. The mine is now in full course of working, with all the requisite machinery and buildings erected for its full development; and considering the number of the lodes, the character of the country, and prosperous mines in the neighbourhood, there is every prospect of its turning out, in a short time (if vigorously worked), a valuable property, and such as is rarely offered to the public.

Permission to inspect the mine, the conditions of tender, and the lease, together with further particulars, may be obtained of—

Mr. SAW, 37, Bedford-street, Plymouth, Liquidator,
To whom Tenders should be sent on or before 24th June, 1870.
Dated Plymouth, May 31st, 1870.

VALUABLE LEAD MINE FOR SALE.

TO BE SOLD, BY PRIVATE OFFER, all that valuable LEAD MINE, called "OLD CARRS," or "CARRS WEST OF NENT," situated in the midst of, and surrounded by, the rich and prolific mines of the London Lead Company, at NENTHEAD.

The mine is held under lease of the Lords Commissioners of the Admiralty, and is renewable on its termination. The west check of the vein has been wrought from time immemorial, and has been very productive, ore having been raised as low as 7s. per ling. The east check of the vein is thrown down, and remains entirely unexplored. Some of the small shareholders are unwilling to embark in the undertaking of exploring it, which necessitates a sale.

Further particulars may be known on application to Mr. JOSEPH BLACKLOCK, Nenthead, the agent; Mr. WILLIAM HALL, Coal Merchant, Alston; or Mr. SHAW YOAMAN, Garrigill, any of whom will receive offers in writing until the 1st day of July next ensuing.—Nenthead, 1st June, 1870.

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The Railway, which adjoins on one side, and the Aire and Calder Navigation, which adjoins on the other side of the works, afford every facility for receiving material, and sending away the manufactured produce.

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A portion of the purchase money may, if required, remain on security of the premises.

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For further particulars, apply to Mr. GEORGE GRAHAM, C.E., Low Beechburn Colliery, near Darlington; or to Messrs. NORTH and SONS, Solicitors, Leeds.

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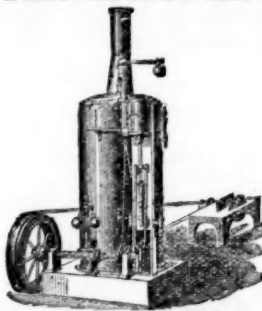
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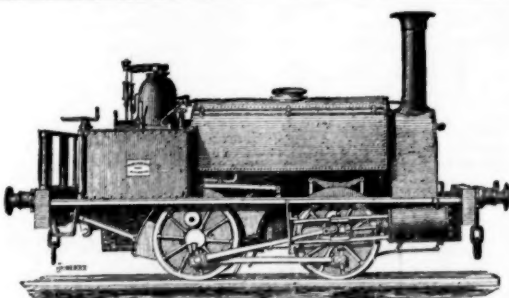
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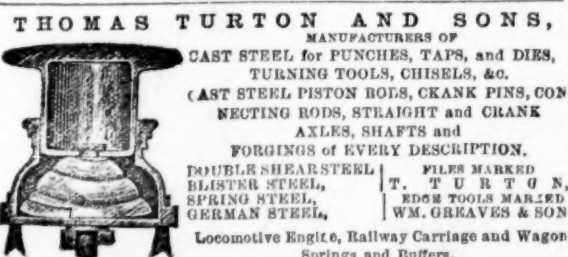
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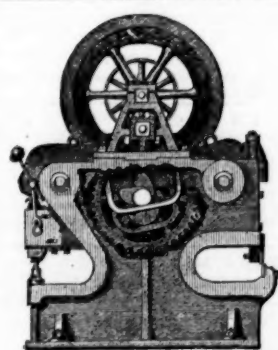
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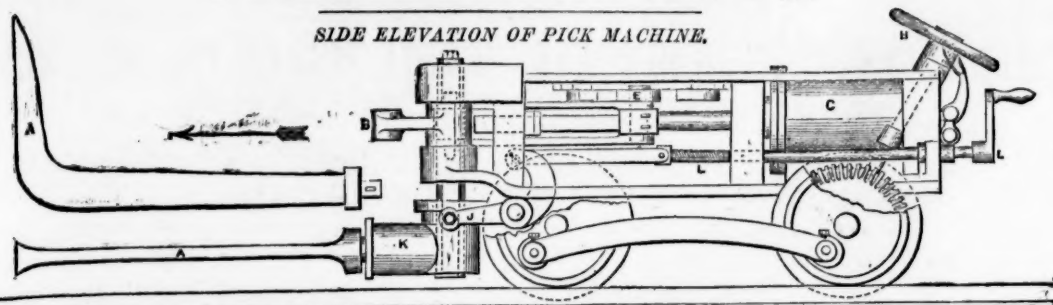
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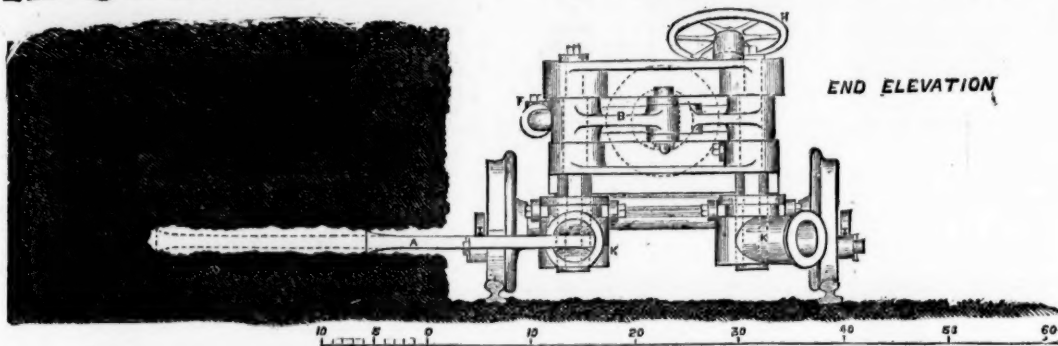
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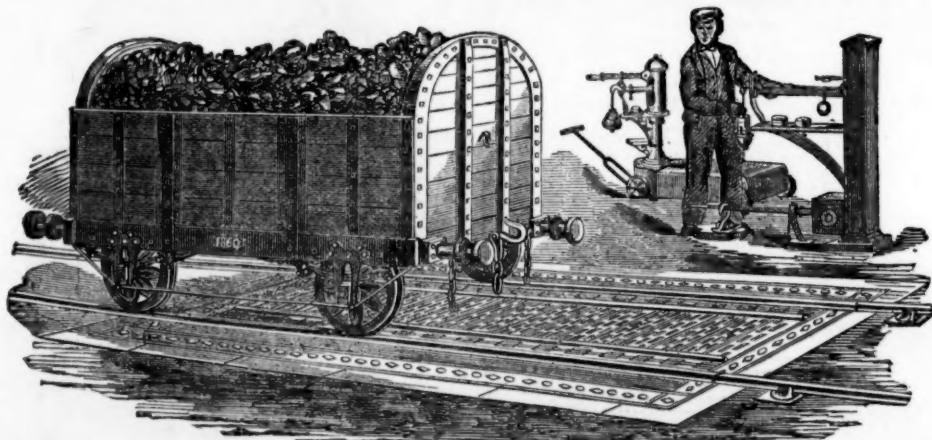
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100	Belknap, Vaughan, and Co. [L.]	30 0 0	30 25 pm.
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15	Hopkins, Gilkes, and Co. [L.]	10 0 0	7 1/2 pm.
100	Midland Iron Co. [L.]	5 0 0	20 19 1/2 pm.
1 1/2	Mersey Steel and Iron Co. [L.]	11 10 0	8 1/2 7 1/2 pm.
25	Palmer's Shipbuilding and Iron Co. [L.]	25 0 0	40 41 pm.
25	Palmer's Shipbuilding and Iron Co. [L.]	25 0 0	40 41 pm.
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20	Patent Shaft and Axletree Co. [L.]	10 0 0	5 pm.
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100	Staveley Iron and Coal Co. [L.]	60 0 0	40 41 pm.
100	Staveley Iron and Coal Co. [L.]	100 0 0	8 1/2 pm.
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75	Wigan Coal and Iron Co.	75 0 0	10 dis.

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BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c. Cheshire	10 0 0	—	—	10 0 0	—	—
6000	Boscawell, c. St. Just	1 0 0 0	—	—	1 0 0 0	—	—
200	Botalack, c. St. Just	91 5 0 0	230	270 290	575 5 0 0	10 0 0	May 1870
20000	Bronfloyd, c. Cardigan	2 10 0 0	3 1/2	3	3 0 0 0	1 6 1/2	Apr. 1870
2004	Bwlch Consoles, s-l, Cardigan	4 0 0 0	3 1/2	3 1/2	3 0 0 0	2 0 0 0	May 1870
6400	Cashwell, c. Cumberland	2 10 0 0	—	—	2 10 0 0	2 6 1/2	Dec. 1869
916	Cargoll, s-l, Newlyn	15 5 7 1/2	5	4 1/2	16 15 0 0	10 0 0	Aug. 1869
1280	Chanticleer, c. Flint	7 8 1/2	—	—	7 8 1/2	10 0 0	Nov. 1868
2430	Cook's Kitchen, c. Illogan	19 14 0 0	18	20 22	10 0 0	7 6 1/2	Apr. 1870
1000	Cornwall Hematite	10 0 0 0	—	—	10 0 0 0	10 0 0	—
509	Creechbrow and Penkell, c. l	—	—	—	2 5 0 0	1 5 0 0	Apr. 1870
567	Cwm Erwin, c. Cardiganshire	7 10 0 0	—	—	31 18 0 0	5 0 0 0	Apr. 1870
128	Cwmystwith, c. Cardiganshire	60 0 0 0	—	—	387 10 0 0	2 0 0 0	July 1869
280	Derwent Mines, s-l, Durham	300 0 0 0	—	—	177 0 0 0	2 10 0 0	July 1869
1024	Devon Gt. Consoles, c. Tavistock	1 0 0 0	115	105 115	1145 0 0 0	4 0 0 0	May 1870
656	Ding Dong, c. Gwalf	49 14 6 1/2	18	17 19	6 0 0 0	1 0 0 0	Dec. 1869
1432	Dolcoath, c. l, Camborne	32 4 6 1/2	135	132 137 1/2	238 12 6 1/2	3 0 0 0	Apr. 1870
12800	Drake Walls, c. St. Cleer	10 10 0 0	1 1/2	1 1/2	14 13 6 1/2	0 2 0 0	Apr. 1870
6144	East Caradon, c. St. Cleer	2 14 6 1/2	4 1/2	4 1/2	182 10 0 0	2 0 0 0	Feb. 1870
300	East Darran, c. Cardiganshire	32 0 0 0	—	—	10 3 3 0	4 0 0 0	May 1870
6400	East Pool, c. l, Pool, Illogan	0 9 9 1/2	7 1/2	7 1/2	10 16 0 0	2 0 0 0	Apr. 1870
1906	East Welsh Lovell, c. Wendron	3 9 0 0	33	33 1/2 34 1/2	75 15 0 0	10 0 0	June 1870
2800	Fordale, c. l, Isle of Man	25 0 0 0	—	—	4 5 6 0	2 6 1/2	Apr. 1870
5000	Frank Mills, c. l, Christow	3 18 6 1/2	—	2 1/2 3 1/2	12 3 0 0	0 3 0 0	Mar. 1870
3560	Gawton, c. Tavistock	3 10 6 1/2	—	18 1/2 19 1/2	12 3 0 0	0 3 0 0	Mar. 1870
15000	Great Laxey, c. l, Isle of Man	5 0 0 0	—	—	15 8 6 0	2 6 1/2	May 1870
3000	Great Northern Manganese	5 0 0 0	—	—	62 10 0 0	1 10 0 0	Feb. 1870
5908	Great Wheal Vor, c. l, Helston	40 0 0 0	11	10 11	15 8 6 0	2 6 1/2	May 1870
1024	Herodford, c. l, near Liskeard	8 10 0 0	42	39 41	62 10 0 0	1 10 0 0	Feb. 1870
12000	Holmbush and Kelly Bray, c. l	1 0 0 0	—	—	0 3 0 0	1 0 0 0	Nov. 1869
5000	Ironmasters' Company	10 0 0 0	—	—	0 9 0 0	0 9 0 0	Feb. 1870
10000	Killalee, c. l, Tipperary	1 0 0 0	—	—	0 7 0 0	6 p.ct.	Mar. 1870
165	Levant, c. l, St. Just	10 8 1 1/2	—	—	1101 0 0 0	2 0 0 0	Aug. 1869
400	Lisburne, c. l, Cardiganshire	18 15 0 0	—	—	529 0 0 0	2 0 0 0	Jan. 1870
3000	Mares-y-Saer, c. l, Gwynedd	4 10 6 1/2	6 1/2	6 1/2	4 0 0 0	5 0 0 0	Oct. 1868
9000	Marke Valley, c. Cardigan	4 10 6 1/2	6 1/2	6 1/2	373 8 6 1/2	5 0 0 0	Mar. 1870
1800	Mina Mining Co., c. l, Wrexham	25 0 0 0	—	—	273 8 6 1/2	5 0 0 0	Mar. 1870
20000	Mining Co. of Ireland, c. l, c. l	7 0 0 0	—	7 1/2 7 1/2	0 2 5 0	2 5 0 0	Jan. 1870
40000	Mwyndy Iron Ore	3 10 0 0	1 1/2	1 1/2	0 16 6 0	5 0 0 0	Jan. 1870
20000	North Levant, c. l, St. Just	10 12 0 0	11 1/2	11 11 1/2	1 5 0 0	10 0 0	Mar. 1870
200	Parys Mines, c. Anglessey	50 0 0 0	—	—	162 10 0 0	2 10 0 0	Aug. 1868
5000	Penhalls, c. St. Agnes	3 0 0 0	6	5 1/2 6	1 5 6 0	5 0 0 0	Apr. 1870
500	Phoenix, c. l, Llantrisant	50 0 0 0	—	—	466 10 6 1/2	7 0 0 0	May 1870
12800	Poldice, c. l, Gwynedd	0 12 6 1/2	—	3 1/2	0 6 0 0	10 0 0	May 1870
1120	Provide, c. l, c. l, Llantrisant	10 6 7 1/2	40	39 41	97 2 6 1/2	1 10 0 0	Mar. 1870
5809	Rosewall Hill & Ransom, c. l	4 0 0 0	1 1/2	1 1/2	0 1 6 0	1 6 1/2	May 1870
512	South Caradon, c. St. Cleer	1 6 0 0	300	270 290	642 10 0 0	5 0 0 0	Mar. 1870
6000	South Darran, c. l, Cardigan	3 6 6 1/2	—	—	1 0 0 0	2 6 1/2	Nov. 1869
937	South Wh. Croft, c. l, Illogan	24 10 10 1/2	9 1/2	8 9	2 10 0 0	10 0 0	Sept. 1869
496	So. Wh. Frances, c. l, Illogan	18 18 9 1/2	15	16 18	374 18 6 1/2	1 0 0 0	Mar. 1868
242	Spear Moor, c. l, St. Just	56 17 9 1/2	9	12 10	12 15 6 1/2	1 0 0 0	Feb. 1870
1940	St. Ives Consoles, c. l, St. Ives	10 15 0 0	9	8 1/2 9 1/2	4 10 0 0	10 0 0	Mar. 1870
8721	St. Just Amalgamated, c. l	3 10 0 0	—	—	0 2 6 0	0 2 6 0	Nov. 1869
600	Summer Hill, c. l, Mold	3 18 6 1/2	—	—	2 5 0 0	5 0 0 0	Feb. 1868
6000	Trieroff, c. l, Pool, Illogan	9 0 0 0	34	34 36	24 8 6 1/2	1 7 6 1/2	May 1870
2000	Trunp, c. l, Helston	11 10 0 0	24	25 27	10 17 0 0	15 0 0	Apr. 1870
12000	Van, c. l, Llanidloes	4 5 0 0	80	78 80	1 10 0 0	10 0 0	Mar. 1870
3000	W. Chiverton, c. l, Perranzabuloe	10 0 0 0	57	55 57	43 7 6 1/2	2 0 0 0	May 1870
5000	West Gwelford, c. l, Breage	0 10 0 0	—	—	0 3 0 0	1 0 0 0	June 1869
2582	West Great Work, c. l, Breage	5 11 0 0	—	30 32 1/2	0 2 0 0	2 0 0 0	June 1869
512	West Welsh Lovell, c. l, Wendron	10 15 0 0	30	30 32 1/2	4 10 0 0	1 10 0 0	Oct. 1869
400	Wh. Chiverton, c. l, Camborne	47 0 0 0	130	125 130	656 0 0 0	1 0 0 0	Apr. 1870
512	Wheal Bae, c. l, Illogan	5 2 6 1/2	68	75 80	632 10 0 0	1 0 0 0	June 1868
512	Wheal Jane, s-l, Kea	10 15 0 0	47	47 1/2 50	30 10 0 0	1 10 0 0	May 1870
4295	Wheal Killy, c. l, St. Agnes	5 4 6 1/2	7 1/2	7 1/2	4 19 0 0	0 6 0 0	May 1870
1024	Wheal Margaret, c. l, Uny Lelant	3 10 6 1/2	13	13 15	12 2 6 1/2	0 15 0 0	Jan. 1870
896	Wheal Margaret, c. l, Uny Lelant	13 17 6 1/2	8	7 9	77 15 0 0	10 0 0	May 1870
1024	Wh. Mary Ann, c. l, Menheniot	8 0 0 0	11	11 13	70 17 6 1/2	0 10 0 0	June 1870
1000	Wh. Mary Ann, c. l, Plymouth	2 12 6 1/2	—	—	452 9 0 0	5 0 0 0	Aug. 1869
80	Wh. Mary Ann, c. l, St. Just	2 0 0 0	—	—	452 9 0 0	5 0 0 0	Aug. 1869
396	Wh. Mary Ann, c. l, St. Just	58 10 0 0	24	22 25	264 15 0 0	0 0 0 0	Feb. 1869
17000	Wicklow, c. l, Wicklow	2 10 0 0	—	—	60 3 0 0	5 0 0 0	Sept. 1869

FOREIGN DIVIDEND MINES.

35000	A. Amallos, c. l, Spain	2 0 0 0	2	1 1/2 2	0 10 6 0	2 0 0 0	Mar. 1870
20000	Australian, c. l, South Australia	7 6 1/2	—	—	0 1 6 0	0 6 1/2	Aug. 1868
15000	Cape Copper Mining	10 0 0	17	17 18	0 17 6 0	10 0 0	Mar. 1870
20000	Central American Association	0 10 0 0	—	—	0 6 0 0	0 10 0 0	July 1869
10000	Coppor Mining Co., Chile	16 10 0 0	2	1 2	0 4 0 0	4 0 0 0	April 1869
76162	Don Pedro North del Rey	0 14 0 0	3 1/2	3 1/2	2 3 9 0	4 0 0 0	Mar. 1870
70000	English and Australian, c.	2 10 0 0	—	—	—	—	—
25000	Fortuna, c. l, Spain	2 0 0 0	3	2 1/2 3 1/2	2 0 10 0 0	3 0 0 0	Mar. 1870
20000	Gen Mining Assoc., Nova Scotia	20 0 0 0	6	4 6	23 10 0 0	0 15 0 0	June 1868
10000	Genusa, c. l, Sardinia	5 0 0 0	—	—	10 per cent.	—	Aug. 1869
65000	Kapunda Mining Co., Austr	1 0 0 0	3 1/2	3 1/2	0 1 10 0 0	0 5 0 0	Nov. 1869
15000	Linsua, c. l, Spain	3 0 0 0	4 1/2	4 1/2	12 4 0 0	0 5 0 0	Mar. 1870
10000	Manacillo, c. l, Chile	1 0 0 0	2 1/2	2 1/2	10 per cent.	—	Yearly.
10000	Montbamb, c. l, France	20 0 0 0	17	16 18	7 1 8 0	1 15 6 0	Nov. 1869
00000	Port Phillip, c. l, Clunes	1 0 0 0	3 1/2	3 1/2	1 6 0 0	1 6 0 0	Jan. 1870
20000	Scottish Australian Min. Co.	1 0 0 0	7 1/2	3 1/2	6 per cent.	—	Apr. 1870
11000	St. John del Rey, Brazil	15 0 0 0	20	21 23	81 10 0 0	4 5 0 0	Dec. 1869
4000	Swedish Sulphur Ore	2 10 0 0	—	—	7 1/2 per cent.	—	Dec. 1869
13500	Vancouver Coal Mining	6 0 0 0	7 1/2	7 1/2 8	3 18 6 0	0 15 0 0	May 1870
50000	Victoria (London) [25000 c. l, pd., 25000 12s. 6d. pd.]	—	—	—	0 9 7 0	0 7 0 0	July 1869
10000	West Canada Mining Co.	1 0 0 0	—	—	0 19 6 0	0 2 6 0	May 1869